PRODUCT COSTING USING ACTIVITY-BASED COSTING
A CASE STUDY

A thesis

submitted in partial fulfilment

of the requirements for the Degree

of Master of Commerce

in the

University of Canterbury

by

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University of Canterbury

1990

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Chapter

ABSTRACT

As manufacturing enterprises have become less labour-paced the process of recovering overheads by allocation on the basis of direct labour costs has been challenged.

It has been claimed by proponents of Activity-based Costing (ABC) that it is possible to identify the real cost of production by careful identification of 'cost-drivers'.

This thesis examines the conceptual relations between ABC and traditional product costing models.

It analyses the ABC model to determine whether it produces results different from allocation-based models.

The thesis reports the results of implementing activity-based costing in parallel with an existing costing system in a New Zealand manufacturing company.

CHAPTER 1

THESIS INTRODUCTION

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CHAPTER 1

THESIS INTRODUCTION

I. Introduction

In recent years, product costing has become a topical accounting subject.[1] As managers of companies struggle to manage diverse product lines in the face of rising competition, it has become very important for them to have detailed knowledge of their product costs so that they can make effective strategic decisions.[2] However, many are using product costing systems designed decades ago in a time of narrow product ranges and labour-paced factories. Therefore, their decisions in areas such as product mix-selection and product pricing may well be inappropriate and could, at worst, lead to company failure. As a result of these problems, product costing systems are coming under increasingly detailed scrutiny by both academics and practitioners.

This thesis will examine one of the most important of the new product costing models, Activity-based Costing (ABC). The thesis will explore the ABC model and attempt to draw some conclusions about its validity by examining a case study where the model was used.

Section 1 of this chapter will give a brief background to product costing models. Section 2 will describe ABC and the case study. Section 3 will present the goals and methods of the thesis.

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1. Cooper R. and R.S. Kaplan, "How Cost Accounting Distorts Product costs", Management Accounting, April 1988; Cotton W., "Transaction Based ("Event Driven") Product Costing for the Factory of the 1990s", Accountants Journal, April 1990; Dugdale D., "Costing Systems in Transition", Management Accounting, Jan 1990; Johnson H.T. and R.S. Kaplan, Relevance Lost, Harvard Business School Press, Boston 1987
2. "... it is only today, when the principle of competition has attained its full growth and has become a matter of life and death, that the commercial organization of manufactories is felt to have become a matter of prime urgency". These words, by Alexander Hamilton Church "The Proper Distribution of Expense Burden", The Engineering Magazine, New York, 1908, p. 10] are just as applicable in 1990.

SECTION 1

II. The Study of Product Costing

A. Background

Traditional product costing systems are of two types: variable costing and absorption costing. The former system, also called marginal costing, uses only those costs which change directly in response to short term fluctuations in production volume. The most common examples of variable costs are direct materials and direct labour. Overhead costs, on the other hand, are considered by this model to be fixed. Decisions relating to products are obviously influenced by highly visible changes in variable costs. The influence of overhead costs, which are excluded from this model and which may have considerable effect on products, is less visible.

The absorption costing model allocates overheads to products using a volume-related allocation base such as direct labour hours. It can, therefore, incorporate overhead costs into product related decisions. However, as the allocation base can be quite arbitrary and averages all overheads over all products, this costing model is a fairly crude means of determining a product's cost. This inaccuracy is made worse when overheads are a large percentage of a firm's total costs.

As early as the 1900s, engineers such as Alexander Hamilton Church were trying to determine accurate product costs by tracing costs to those products which caused them. Church argued that the simple burden rates of the absorption costing model did not trace costs with a sufficient degree of accuracy for use in important tasks such as identification of inefficiencies in the production processes.[3] However, Church was thwarted by the size of the task of manually processing the necessary

3. Church A.H., "Organisation by Production Factors", The Engineering Magazine, April 1910.

information for his more detailed costing model. Today, with computers, this task is considerably easier.

By the 1920s, the demands of external financial reporting meant that auditability became the key issue influencing product costs and the pressure for accurate cost tracing was lost. The traditional absorption costing model was used because it was simple and easy to audit. It was able to value total inventory for income reporting purposes and so long as the total value of inventory was correct, it was unimportant whether individual products were accurately costed.[4]

Problems arose only when managers began to use these same product costs for decision-making. The averaging effect of simple percentage burden rates based on a single volume-related allocation base has the effect of overcosting high volume products and undercosting low volume products. This means that managers, using product cost information to decide upon product mixes, are likely to drop profitable long run products in favour of unprofitable short run products.

The absorption costing system is still in use today despite the fact that the manufacturing environment is considerably different. Labour is as low as 3%-5%[5] of total manufacturing costs and, in modern factories, has tended to have the characteristics of a fixed cost. This is because workers act in a supervisory role, operating a number of machines, each making a different component. To continue to use labour as an allocation basis distorts product costs.[6]

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4. Johnson and Kaplan, 1987.
5. Hunt R., L. Garrett and C.M. Merz, "Direct Labour Cost Not Always Relevant at H-P", Management Accounting, Feb 1985, p. 60.
6. Cooper R. and R.S.Kaplan, "How Cost Accounting Systematically Distorts Product Costs" in Accounting & Management, Field Study Perspectives, W.J. Bruns Jr and R.S. Kaplan (Eds.), Harvard Business School Press, 1987, p. 204.

As a result of competitive pressures and a growing realisation that the traditional absorption costing model is unable to handle production complexity, new costing models are emerging to improve the relevance and accuracy of cost accounting techniques. In particular, there is a growing awareness that costings based on volume measures are no longer accurate enough to use for decisions involving product costs. The trend is towards tracing costs directly to products rather than just allocating them.

The basic cause of overheads is the consumption of resources to manage diversity. Strategic cost analyses use the idea that "... people cannot manage costs, they can only manage activities that cause costs..."[7]. Therefore, if costs can be associated with these activities, they can be more accurately calculated and effectively controlled. Activity Based Costing (ABC) endeavours to calculate product costs by tracing resource costs to individual products according to that product's consumption of each resource. The amount consumed is proportional to the product's consumption of activities associated with the resource.

An illustration of the distortions inherent in absorption costing models can be seen in the case of Schrader Bellows. This company was a manufacturer of compressed air equipment. The management carried out a strategic cost analysis using ABC (albeit in a modified form) which showed that products which the traditional product costing system said were profitable, with gross margin percentages between 26% and 46%, were in fact making losses as high as 258%. See table 1 for a comparison of the costs of some of Schrader Bellows' products.

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7. Johnson H.T., "Organizational Design versus Strategic Information Procedures for Managing Corporate Overhead Cost: Weyerhaeuser Company, 1972-1986" in Accounting & Management, Field Study Perspectives, W.J. Bruns Jr and R.S. Kaplan (Eds.), Harvard Business School Press, 1987, p. 51.

Table 1

PRODUCT COSTS AT SCHRADER BELLOWS[8]

		Existing Cost System				Transaction Based System				Percentage of Change	
Product	Sales Volume	Unit Cost	Sale Price	Unit Gross Margin	GM %	Unit Cost	Sale Price	Unit Gross Margin	GM %	Unit Cost	Unit Gross Margin
1	43,562	7.85	13.36	5.51	41%	7.17	13.36	6.19	46%	-8.7%	12.3%
2	500	8.74	12.50	3.76	30%	15.45	12.50	(2.95)	-24%	76.8%	-178.5%
3	53	12.15	23.04	10.89	47%	82.49	23.04	(59.45)	-258%	578.9%	-645.9%
4	2,079	13.63	18.54	4.91	26%	24.51	18.54	(5.97)	-32%	79.8%	-221.6%
5	5,670	12.40	20.35	7.95	39%	19.99	20.35	0.36	2%	61.2%	-95.5%
6	11,169	8.04	13.53	5.49	41%	7.96	13.53	5.57	41%	-1.0%	1.5%
7	423	8.47	12.21	3.74	31%	6.93	12.21	5.28	43%	-18.2%	41.2%

B. Evidence of Problems With Costing Systems

Evidence that a costing system is becoming inaccurate can come from many sources.[9] However, there are two major factors which illuminate the problem. Firstly, managers do not trust the costing system. They are aware that distortions are occurring and either override the cost accounting system by altering the product mix or use their own ad hoc costing systems to support their decisions. In a survey of US manufacturers, evidence was found that managers used their accounting systems to report financial results but used company engineers to provide cost information for decision making. This was because the cost accounting system could not be trusted to provide accurate information.[10]

Secondly, companies may have steady or increasing sales yet profits are declining. This is evidence that products are costing more than the accounting systems are predicting. See table 2.

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8. Cooper R. and R.S. Kaplan, "How Cost Accounting Distorts Product Costs", Management Accounting, April 19 24.
9. Cooper R., "You Need a New Costing System When ...", Harvard Business Review, Jan-Feb 1989.
10. Howell R.A., J.D. Brown, S.R. Soucy and A.H. Seed, III, Management Accounting in the New Manufact Environment, p. 41.

Table 2

FINANCIAL STATISTICS: SCHRADER BELLOWS AUTOMATION GROUP 1979-1983[11]
($ million)

	1983	1982	1981	1980	1979
Sales	99.7	102.5	123.2	123.1	120.2
Operating Income	6.0	4.7	12.0	16.9	19.5
Identified Assets	92.8	87.5	96.1	97.4	97.2
Capital Expenditure	4.0	4.7	5.0	5.8	5.0

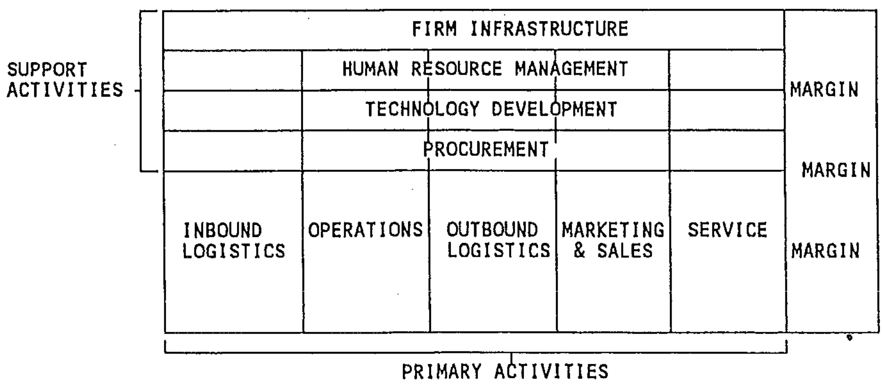
SECTION 2

III. Activity Based Costing: The Solution to Product Costing Problems?

ABC is being developed by Harvard Business School academics Robin Cooper and Robert S. Kaplan and Stanford University's H. Thomas Johnson. It endeavours to more accurately capture the cost of a product in terms of its consumption of company resources. It is a "user-pays" costing model which works by focusing on the complexity of products rather than volume factors such as direct labour hours or machine hours. All overhead resources of the company can be captured by the process, including previously excluded areas such as administration and marketing costs.

Figure 1

PRODUCT COST SYSTEMS - A SUMMARY[12]



11. Cooper R., Schrader Bellows: A Strategic Cost Analysis, Harvard Business School Case 9-186-272, Exhibit 2, p. 9.
12. Kaplan R.S., "Regaining Relevance", in Capettini R. and D.K. Clancy Eds., Cost Accounting, Robotics and the New Manufacturing Environment, AAA, 1987, Exhibit 7-13, p. 7.26.

A long run view is taken which means that all costs can be assumed to be variable. That this view is valid is evidenced by the fact that so called fixed costs are the fastest growing of all costs in a modern factory.[13] Also, managers have to take a long run view when making product decisions as most product lives exceed the length of a reporting period. The size of a particular overhead resource is assumed to vary according to some activity which acts as a **cost driver**. For example, the cost of an accounting department could vary according to the number of invoices processed rather than the amount of direct labour hours worked on the production line it supports. A set up department's cost would vary according to the number of set-ups i.e. production runs. These activities are normally transactions of some kind[14].

In the first stage of the ABC process, costs are traced, through the use of first stage cost drivers, from production resources to cost pools based on activities relating to those resources. In the second stage, costs are traced from the cost pools to products using second stage cost drivers. This costing system differs from traditional models where, in the first stage, costs are allocated from service departments to production departments. In the second stage costs are traced from the production departments to products using only volume based cost drivers.

Most of the information to do with ABC has been derived from case studies emanating from the Harvard Business School[15]. Most of these case studies are of

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13. Kaplan R.S., "Regaining Relevance", Capettini R. and Clancy D.K., Eds., Cost Accounting, Robotics, and t Manufacturing Environment, pp. 7.10 - 7.15.

14. Miller J.G. and T.E. Vollmann, "The Hidden Factory", Harvard Business Review, Sept-Oct 1985, found that th three main types of transactions:
    1. Logistic transactions: those required to order and track movement of goods.
    2. Balancing transactions: those necessary to ensure goods and services necessary for production matc demand.
    3. Quality transactions: those necessary to ensure product quality matches market requirements.

15. Examples are "John Deere Component Works", Case 187-107, "Schrader Bellows", Case 186-272 and "Sieme Electric Motors Works", Case 189-089/090.

American or European Companies and the time is ripe for a case study of a New Zealand company.

IV. The Case Study Company, Fisher and Paykel Ltd.

Fisher and Paykel, a large New Zealand whiteware manufacturer, has three manufacturing divisions, the Laundry Division, the Refrigeration Division and the Range Division. The Refrigeration Division, on which the case study is based, has a fully automated factory using both imported and home-grown plant and is the equal of any factory in the world. It uses flexible manufacturing systems and has a fully computerised production line.

Each division has its own support departments such as engineering and stores. All divisions use Just-in-Time (JIT)[16] systems and have minimal work-in-progress (WIP) inventories. Their raw materials inventories are also held to the minimum possible amount consistent with their low power over overseas suppliers and the vagaries of shipping services. All production is demand-pull based on JiT though balanced to ensure efficient use of production facilities.

SECTION 3

V. Major Thesis Objective

The goal of the thesis is to analyse the ABC model to assess whether it is the best available method of costing products for strategic product decisions. The thesis will compare ABC with the absorption costing model to determine whether it gives better results.

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16. See Schonberger R.J., Japanese Manufacturing Techniques Nine Lessons in Simplicity, The Free Press, New York, 1982 for a full discussion of the JIT system.

This thesis is a response to the perception that conventional management accounting measures are so inaccurate that they cause dysfunctional decision making. Its focus will be on the production mix decision i.e. which product mix will maximise the profits of the firm. This decision is normally based on the profitability of individual products as determined by the management accounting system.

The thesis will also investigate some of the implementation issues and try to gain insights into the model. In order to achieve its main purpose the thesis will try to answer four questions:

1. Does ABC exist as a distinct costing model or is it merely a more complex allocation system using techniques similar to traditional absorption costing systems?

2. How valid is ABC as a method of costing products for the purpose of determining product mixes in a high technology manufacturing environment?

3. Does ABC produce more useful accounting information than conventional product costing techniques in areas such as inventory valuation for income determination and performance evaluation? Do managers perceive the profitability of individual products as being different from the signals put out by the cost accounting system and does ABC quantify this perception?

4. How feasible and complex are ABC implementations?

Question 1 will be answered by comparing ABC to the traditional method on a deductive basis identifying the differences between the two costing models. From this analysis, the relative strengths of each model can be determined.

Question 2 requires that the internal consistency of ABC be investigated in order to determine the model's validity and usefulness for purposes other than decision-making.

Question 3 focuses on the usefulness of ABC. In order to test how useful ABC is, company managers will be surveyed to find out:

1. Whether managers accept the accuracy of the product costs generated by ABC.
2. Whether managers would use product costs generated by ABC for decision-making.
3. Whether the results align with managers' perception of which products are profitable and which are not.
4. Whether the benefits obtained from the new costing system outweigh the costs and difficulty of obtaining them.

In effect, the usefulness of ABC will be measured by testing ABC predictions of loss-making products against predictions made by managers independently from the existing product costing system.

It must be noted that in the few studies which have been done so far, there has been resistance to the use of ABC by managers. Without pre-empting the findings of the thesis, this does not seem to have been a problem with Fisher & Paykel although that may be because there will be no formal implementation of the model.

VI. Possible Solutions to be Investigated

A. Product Costing Methods

There are currently four major methods of product costing in use. They are:

1. **Traditional Method based on direct labour hour allocations.**
2. **Modified Traditional Method based on alternative allocation bases such as machine hours or material dollars.**
3. **Modified Traditional Method using multiple allocation bases.**
4. **Activity Based Costing.**

The last three methods have been suggested as solutions to the distortions caused by the traditional model. The thesis will discuss the effectiveness of each of these methods at overcoming the distortions.

VII. Thesis Methods

A. The Case Study

A strategic costing analysis using ABC was carried out on the Refrigeration Division of Fisher and Paykel Ltd. The results of that analysis are compared in the thesis with the traditional absorption costing model currently used by the division. The main reason why the company offered this opportunity is that they are concerned about overhead growth and consider that ABC might help them with this problem.

The study took some weeks and consisted of several inter-related phases. The first phase involved gathering data on the direct cost structure of the division, the products and component classifications and relationships and, finally, identification of the production resource departments and their annual costs.

In the second phase, the production resource department managers were interviewed to identify activities carried out in their areas and the cost drivers associated with each activity. Each cost driver was quantified.

Calculations occurred in the third stage. Cost pools were determined and from these transaction costs were calculated. Component costs were calculated from the transaction costs and entered into the company's Material Requirements Planning (MRP) system. This system was "rolled up" to produce product costs.

In the fourth and final stage, the differences between the ABC product costs and the existing product costs were analysed.

B. The Case For a Case Study Thesis

The thesis involves a case study because there is a clearly perceived need amongst management accountants for more empirical research and the thesis is a response to that perception.[17]

Management accounting systems are presumed to provide information to enable decision-makers to control their organisation and direct it towards achievement of its goals. However, as organisations grow more complex and decentralised, managing them becomes more difficult. As management accounting only exists because of, and within these complex entities, it is difficult to use laboratory methods to research into its structures and theories. Within any organisation there is a complicated interaction of people, systems, products and processes and it is only here that management accounting phenomena can be observed[18]. Therefore a field study provides a more suitable method of gaining an insight into the

17. Bruns W.J. Jr. and R.S. Kaplan R.S., Field Studies in Management Accounting, Harvard Business School Press, Boston, 1987.

18. ibid, p. 1.

processes which go into the design, implementation and control of management accounting systems.

Most existing management accounting thought has developed around stable organisations with long production runs and often assume a single product or a two or three product mix. With product proliferation, shorter product lives, increased competition and the rapid growth in technology, this traditional approach to management accounting research is misleading, if not fundamentally flawed. By carrying out research in an actual environment where the forces which act on internal information flows are better able to be observed, it is hoped that an insight can be obtained into the underlying factors affecting a part of the management accounting system: namely manufacturing product mix decisions.

Case studies also offer benefits in hypothesis building. Even though they tend to be situation specific, they provide an opportunity for identifying possible underlying principles which may be hypothesized and tested.

VIII. Conclusion and Overview

Few companies in New Zealand have implemented ABC.[19] It is important to replicate the results of overseas cases in a New Zealand company to see whether the same sorts of problems apply. This case study will attempt to draw conclusions on this issue. Because ABC is such a new model, it has yet to prove itself. The ultimate proof of the effectiveness of a costing model is enhanced profitability through more effective decision-making. However, because the model is still

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19. The only two I know of are Tait Electronics and Comalco Aluminium. As Comalco's profits will be more stro influenced by the world price of aluminium, rather than choice of product costing system, it would be alm impossible to assess the benefits of the ABC implementation. However, there are a few other electronics compan and it may be possible in the future to assess the impact of the change to ABC on Tait's performance.

relatively new, conclusions on this basis are unable to be reached. Accordingly, the thesis will endeavour to assess deductively the model.

The thesis has 10 chapters plus this introduction chapter. In Chapter 2 the traditional costing model and the extensions which have been used to overcome its weakness are examined and the precursors of ABC are discussed. The ABC model, its definitions and characteristics are examined in Chapter 3. The chapter also covers implementation issues and the benefits and limitation of the ABC model. Chapter 4 consists of an abstraction of the ABC model. The goal of the chapter is to determine the assumptions on which the model relies, the variables of which it is constructed and their inter-relationships.

Chapter 5 covers the key differences between the traditional absorption costing model and ABC. This is a key chapter because it addresses the question, "Is ABC just the normal absorption costing model with more allocation bases?".

Chapter 6 addresses the issues which arise from the use of case studies as a research tool. Case studies have less rigour than other research methods and this chapter addresses this and other related issues.

Chapters 7 to 10 cover the case study itself. Chapter 7 is a description of Fisher and Paykel and specifically the Refrigeration Division. Chapter 8 covers the method the case study followed and Chapter 9 some of the implementation problems encountered. Chapter 10 analyses the results and presents some conclusions from those results. The final chapter, Chapter 11, summarises the thesis and presents conclusions from the results of the case study. Insights into ABC which are gleaned from the results are discussed and evaluated.

CHAPTER 2

TRADITIONAL PRODUCT COSTING MODEL

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CHAPTER 2

THE TRADITIONAL PRODUCT COSTING MODEL

I. Introduction

Product costs have many uses, most of them relating to decision-making. Even the reports generated for external reporting are ultimately for the purpose of shareholder and debenture holder decision-making. Determining an accurate or appropriate product cost has been one of the more difficult tasks facing management accountants.[1]

Traditional product costing systems use direct costs plus some, often arbitrary, allocation of fixed costs. In the earlier part of this century when companies were relatively uncomplicated, these simple costing models were satisfactory. In the modern manufacturing environment, companies and the products they make are no longer simple and consequently, the traditional model is failing to produce accurate product costs. The major cause of this distortion is failure of the allocation bases to reflect the complexity and diversity of the production process.

Various solutions are being proposed to solve this problem including more appropriate allocation bases and the use of multiple allocation bases. However, these seem to be less successful than hoped. A new costing model called Activity Base Costing (ABC) is emerging as a solution to the product cost distortion problem. This model will be discussed in detail in Chapter 3 while this chapter concentrates on the traditional model and its derivatives.

Chapter 2 is in three sections. In section 1 the general role of product costing is examined. The traditional product costing models and solutions to their failure is

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1. Johnson and Kaplan 1987.

discussed in Section 2. Finally, in section 3, the background and history of Activity Based Costing is briefly discussed.

SECTION 1

II. Why are Costs Needed?

The need for cost information was noted even in Biblical times:

> *For which of you, intending to build a tower, sitteth not down first, and counteth the cost, whether he have sufficient to finish it.* [2]

Implicit in this quotation is the role of decision-making. Knowledge of costs is required when weighing alternatives for both short term (tactical) decisions and long term (strategic) decisions.

Costs have traditionally been perceived to attach to a product.[3] These product costs are "inventoried" until expensed as part of the revenue generating process. This means that the inventoried costs may be inappropriate for decision-making by managers.

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2. Luke 14 v 28. Used by Horn C.A., "How Victorian Industrial Advances Brought Cost Accounting to the Fore", Management Accounting, Jan 1974.
3. Paton W.A. and A.C. Littleton in their monograph, "An Introduction to Corporate Accounting Standards", [Evanston, Ill, AAA, 1940], are credited with the concept of attaching costs to products. However Paton is on record as wishing that the monograph had never been written [Stone W.E., Ed., "Foundations of Accounting Theory", Accounting Theory Symposium, University of Florida, March 1970]. "The basic difficulty with the idea that cost dollars, as incurred, attach like barnacles to the physical flow of materials and stream of operating activity is that it is at odds with the actual process of valuation in a free competitive market" [ibid, p. x].

III. Functions of a Cost System

There are four major functions of a cost system:[4,5]

1. To allocate costs for periodic financial statements.
2. Facilitate the control of manufacturing processes.
3. Compute product costs.
4. Support special studies.

Johnson and Kaplan believe that an over emphasis on the first role has led to "... the irrelevance of today's cost systems for managerial decisions."[6] The fourth function is hard to predict in advance so it is difficult to clearly identify what data it requires from a cost system. Management accounting requires product costs suitable for the second and third roles.

The quality of a costing system is determined by the degree to which it enhances decision-making within a firm. Sandwell and Molyneux believe that

> *"[t]he key to designing ... improved costing systems ... is to understand the underlying business, and the way it conducts its operations, and then to build the costing system around those structures".*[7]

Frank et al consider that "[t]he ultimate goal [is] to develop a cost system useful for product mix and pricing decisions".[8] They believe that this could be achieved by focusing on the factors driving production costs before considering how these costs were to be attached to products.

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4. Johnson and Kaplan 1987, p. 228
5. Kaplan 1988.
6. Johnson H.T. and R.S. Kaplan, p. 228.
7. Sandwell R. and N. Molyneux, "Will Accountants be Just in Time ?", Accountancy, Sept 1989, p. 70.
8. Frank G.B., S.A. Fisher and A.R. Wilkie, "Linking Cost to Price and Profit", Management Accounting, June 1989, pp. 24-25.

Kaplan believes that more than one cost system is required to avoid the over-emphasis on inventory valuation for financial reporting which results when a single system is used.[9] Product costs determined for this purpose are inappropriate for operational control of firms.[10] By setting up a separate system for operational control purposes, a firm can optimise its product costing system for decision-making. It can increase the frequency of its reports, allow more accurately for cost behaviour patterns and eliminate unnecessary and distorting allocations. In addition it can incorporate non-financial measurements of activities. Howell and Soucy agree with Kaplan, suggesting that

> *"... two primary systems will be developed: one for cost control at the source on a real time basis, and the second for product cost determination and managerial decision making, with a longer term orientation."*[11]

A good product cost system must meet five criteria:[12]

1. Extensive allocations of support department costs will be necessary to give a reasonable approximation of the long-run variable costs of products.
2. As product decisions have long term consequences, all costs should be considered variable. This requires investigation of how costs behave in the long term in relation to both production volume <u>and</u> activities.
3. "All company resources support production and sales" so all costs should be traced to products. The only possible exclusions would be research and development costs and the expenses of unused capacity. The difficulty with the latter is that it may be hard to

9. Kaplan R.S., "One Cost System isn't Enough", <u>Harvard Business Review</u>, January-February 1988.
10. Kaplan 1988, p. 62.
11. Howell R.A. and S.R. Soucy "Cost Accounting in the New Manufacturing Environment" in <u>Factory 2000+ Management Accounting's Changing Role</u>, NAA, New Jersey, 1988.
12. Kaplan 1988, pp. 64-66.

identify. Even if it can be correctly identified, treating surplus capacity as a period cost instead of a product cost is inconsistent with the notion that all costs are driven by activities, which are driven by products.

4. Because product costing information is used for making strategic decisions it is unnecessary to change it more than once a year unless significant changes have been made to the production process.[13]

5. Inclusion of the cost of transactions enhances the ability of product designers to understand the production resource costs which a new product demands. This means they can design more cost effective products.

SECTION 2

IV. Traditional Product Costing Models

There are two traditional product costing models, variable (or direct) costing and absorption costing. An extension of the latter is full costing.

A. Variable Costing

Variable costing is defined as:

> *A method of assigning only variable manufacturing costs to the units produced or other output. Fixed costs are excluded from the unit costs under this method and are classified as period costs as incurred. Also called marginal costing...*[14]

13. Comalco Ltd., who are currently in their second year of an ABC product costing system, are recalculating their costs annually. Mr. Tim Boyle, the accountant in the company responsible for product costing, reports that the company finds annual recalculation satisfactory for the company's purposes. They are excited about the quality of the information that the product costing system is producing.
14. Robb A.J., Dictionary of Accounting Terms, 2nd Ed. Whitcoulls, Christchurch 1986, p. 29.

Variable costing has always been favoured by academics for decision-making.[15] Variable costs are the only costs which change in the short term so are considered by supporters of this model to be the only costs which are relevant for decisions, especially those relating to pricing. The economist's marginal pricing model states that the profit maximising price occurs when marginal cost equals marginal revenue. However, a study in the USA showed that, in practice, of the two models absorption costing is used more widely and is used extensively for pricing decisions.[16]

B. Absorption Costing

Absorption costing has been defined as:

> *A product costing method which assigns all necessary manufacturing costs, direct and indirect, to the units produced*[17]

Robb considers that full costing is the same as absorption costing but others believe that, especially when setting prices, full costing includes allocations of selling and administration expenses.[18] Normally, however, selling and administration expenses are treated as a period expense.

When using the absorption costing model, a product's cost is the sum of the direct costs such as direct materials, direct labour and variable factory overhead plus

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15. Cooper and Kaplan, 1988, p. 22.
16. Govindarajan V. and R.N. Anthony, "How Firms Use Cost Data in Price Decisions", Management Accounting, July 1983. The results of this study are supported by a recent study by M. Joye and P. Blayney, Accounting Research Centre of Sydney University [Accountancy Week, Business Review Weekly, July 13, 1990, p. 91]. They found that 70% of Australian manufacturers used product costs to set prices yet these costs are based on arbitrary allocations.
17. Robb 1986, p. 9
18. Horngren C.T. and G. Foster, Cost Accounting, A Managerial Emphasis, 6th Ed., Prentice-Hall International, New Jersey, 1987, p. 304.

allocations of fixed overhead. It is the allocation process which causes problems with this costing model.

In order to determine the amount of fixed overhead which is allocated to products, an allocation or burden rate is calculated. The first step is to determine what fixed overhead should be allocated. Normally it is only fixed factory overhead unless full costing is used when selling and administration costs are included.

The next step is to determine an activity base which is normally some suitable factor related to production volume. The most commonly used base is direct labour hours. It is preferable that there be a strong cause and effect link between the allocation base and the fixed overhead *but this is not necessary for the model to be used.* By dividing the total fixed overhead by the base, a burden rate can be determined as the following example shows.

Total Annual Fixed Overhead	$13,800,000
Total Annual Direct Labour Hours	400,000
Burden Rate	$34.50 per Direct Labour Hour

Once a burden rate has been determined, a product's cost can be calculated by multiplying the amount of the activity the product generates by the burden rate and adding the result to the product's variable costs.

Table 1

PRODUCT COST CALCULATION

Product A	
Direct Materials	$250.00
Direct Labour Hours 4.5 hrs @ $15 per hour	$67.50
Variable Overhead	$55.00
Fixed Overhead Allocation	$155.25
Total Product Cost	$527.75

The selection of the activity base is the key to accuracy of this costing model. Horngren and Foster suggest four criteria as guidance for selecting the activity base for allocation decisions.[19] They are:

Cause and effect	there is a relationship between the base and the cost.
Benefits received	those products receiving greatest benefit get the largest allocation.
Fairness or equity	Relates mainly to price setting.
Ability to bear	the most profitable products receive the highest allocation.

The use of a single plant-wide burden rate is perfectly acceptable where there is a single product and straightforward processes. However, as soon as another product line is added and/or production processes become more sophisticated, then the accuracy of the product costs declines.

V. Factors Indicative of Distortions in the Costing System.

Cooper has identified several factors which may cause a company to suspect that the product costing system is untrustworthy.[20] These may be re-classified under four headings: market factors, production factors, accounting factors, and management factors.

1. Market Factors

* The company has what it believes to be a high margin niche all to itself which implies that competitors know it is really not a high margin niche.
* Competitors prices seem unrealistically low.

19. Horngren and Foster, 1987, Exhibit 12-2, p. 414.
20. Cooper 1989c.

* Competition has intensified.
* The firm's marketing strategy has changed. This factor is especially important if the change is from high volume standardized products to low volume customized products.
* Customers don't seem to mind price increases. This implies that they perceive a higher value for products than the company's pricing suggests.
* The results of bids are hard to explain. Bids the company thinks it would lose, it wins and vice versa. This occurs because the cost information on which the bids are based is faulty.
* The environment has become deregulated.

2. Production Factors

* Production managers want to drop seemingly profitable products. Conversely there may be a reluctance to drop products shown by the costing system to be making a loss.[21] This factor occurs because production managers know which are the costly products by the amount of effort (activity) required to make them.
* Automation has increased and technology has improved.
* There have been changes in products' use of support functions e.g. more detailed inspection is required.
* The manufacturing process has been simplified.
* Products have been unbundled i.e. products which have been sold as a set are separated and sold individually.
* Vendor bids are lower than expected i.e. lower than the calculated cost of producing the same component internally.

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21. Frank G.B., S.A. Fisher and A.R. Wilkie, "Linking Cost to Price and Profit", Management Accounting, June 1989, p. 23.

3. Accounting Factors

* Profit margins are hard to explain. A product's contribution margin might be low yet the production managers know it is being made more efficiently than others. This is evidence that a volume based allocation system is over-burdening the product with overhead.
* Hard-to-make products show big margins. This is illogical as more effort should equal more cost.
* Departments have their own ad hoc costing systems. This is evidence that user managers don't believe in the formal system.
* The accounting department spends a lot of time on special projects. This indicates that there is insufficient information coming from the existing system.
* Reported costs change as accounting standards change.

4. Management Factors

* If the company's strategy has changed, this has an impact on individual manager's personal goals. The cost system may be inadequate to support senior management when they change their strategy and want to reward different subordinate behaviour.

Failure of the accounting system to provide correct information can lead to inadequate decision-making. Marketing strategies can be misdirected through distorted product costs. Overheads can become hard to manage. There may be misplaced emphasis on cost cutting in an endeavour to improve profitability.

Flexible, automated machinery which could be used for high volume parts is used instead on customized parts.[22]

Deteriorating profitability while revenue is rising is cause for suspecting the product costing system.[23] This is often a result of overheads increasing (especially in the area of service departments) at a faster rate than other costs. In one case, service department costs had risen 117% in six years while factory overhead had risen only 36%.[24]

VI. Reasons for Distortions

Some of the reasons which have been put forward as causes of distortions in product costs are as follows:[25,26,27]

1. Short run products require more support from production resource departments such as scheduling, engineering, computing and purchasing. These products also require more frequent start-up and shut-down periods than long run products. This means that they not only require more set ups, causing extra set up costs but incur additional costs through inefficiencies during these start up and shut down periods.
2. When plant wide allocation rates are used, all overheads are averaged across all products. Because volume based allocation bases are used, the higher volume products get a share of the costs caused by the short run, less efficient products. This makes long run products appear to be less profitable.

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22. English L., "Management Accounting: Time for Change", Australian Accountant, Aug 1988, pp. 75-76.
23. Schrader Bellows Case HBS Case Series 9-186-272.
24. Romano 1989 p. 65
25. Cooper and Kaplan 1988.
26. Kaplan 1987.
27. Cooper 1987a., Cooper 1987b.

3. All costs should be included in product costs. Traditionally, distribution and administration costs have been treated as period costs and are therefore excluded from the product cost calculation. The costs of a product consist of the cost of all of the activities necessary both to produce it and to get it into the customer's hands. Short run products require as much or more selling and administration costs as long run products.
4. Because the long-run products are carrying too much overhead, focused competitors are likely to show lower costs. They will be able to sell at a lower price and squeeze the company out of that market niche.
5. Traditional product costing systems assume that indirect costs are fixed yet in reality they are the fastest growing of all costs in manufactured products.[28] This fact is obscured by the short time frame used by the traditional process (typically one month).
6. Volume based allocation methods do not account for product diversity. This makes it difficult to see how resource department costs are varying and why.
7. Distortions are systematic i.e. short run products are under-costed, long-run products are over-costed.[29]

One of the major causes of distortions is the use of volume allocation bases for allocation of fixed overhead. Traditionally direct labour has been used to allocate indirect costs to products. As automation has increased so labour has become a much smaller part of product costs. Hewlett-Packard found that labour has fallen to between 3% and 5% of product costs.[30] At Harley Davidson, where direct labour had fallen to 10% of product costs, the management considered that direct labour was the "log-jam" which conflicted with the other areas of "continuous

28. Miller and Vollman 1985, pp. 142-143.
29. Johnson 1988, p. 29
30. Hunt R., L. Garrett and M. Merz, "Direct Labour Cost Not Always Relevant at H-P", Management Accounting (USA), February 1985, p. 60.

improvement and excellence" in the factory. "It was the prime element of control and the foundation of accounting systems throughout the factory".[31] But as labour dollars fell, less overhead was absorbed giving the impression that performance was deteriorating. This conflicted with other signals which showed considerable improvement in performance. For example, scrap rates were falling, inventory costs were improving and throughput was rising, all indicating improved performance.
The solution adopted by both Hewlett-Packard and Harley Davidson was to combine direct labour with overhead. There are two major reasons for making this move. Firstly, direct labour is such a small percentage of total costs, that it is not worth the extra cost of monitoring it more accurately.[32] Secondly, labour is becoming more indirect than direct, as a result of automation. Automated machines need only to be supervised so one worker may be able to supervise several machines, all working on different components at the same time. This makes it difficult to trace his labour to any specific component or product.

However in labour-paced plants, volume measures are still the drivers of overhead costs. A study by Foster and Gupta of 37 different manufacturing facilities of a large multinational electronics firm found that direct labour was a good predictor of total overhead despite being only 6% of total manufacturing costs.[33] They found a similar high relationship with another volume measure, direct material dollars. The authors conclude that this is because the plants are not highly automated which suggests that volume cost drivers are appropriate in labour-paced firms while inappropriate in machine-paced firms. To illustrate the difference between machine and labour paced plants, consider the difference between a clothing factory where most activities are labour intensive and a computer-manufacturing plant where all

31. Turk 1990, p. 29.
32. Hunt et al 1985, pp. 60-61.
33. Foster and Gupta 1988, p. 20.

production activities are carried out by robots. The clothing factory is labour-paced while the computer plant is machine-paced.

VII. Suggested Solutions to Improve the Accuracy of Product Costs

When the product costing system becomes untrustworthy, there are three main options a company may take to make improvements. They are:

1. Change to a more appropriate allocation base
2. Change to multiple allocation bases
3. Adopt Activity based costing

A. More Appropriate Allocation Bases

This is the easiest response and on a cost benefit basis may be the best option. It is especially appropriate when firms become more automated and labour becomes a smaller proportion of total costs. As automation increases and workers become supervisors of several different machines rather than working just one, their costs become indirect rather than direct. It is the machines which are driving the costs so the use of machine hours to allocate costs increases the accuracy of product costs.

Using machine hours as an allocation base has several advantages. Firstly, the rate may be more meaningful to managers. When labour is a very low percentage of total costs it is not uncommon for burden rates to be as high as 900%. Using machine hours reduces these rates to something more reasonable.[34]

The second advantage is that diverse use of machinery by products is accurately reflected in product costs. This means that a product spending an hour on each of

34. Turney P.B.B., "Ten Myths About Implementing an Activity-Based System", Journal of Cost Management for the Manufacturing Industry, Spring 1990, p. 27.

four different machines will carry more costs from one spending a hour on just one machine.

However, there is a disadvantage to using machine hours. Machine hours will not accurately capture those costs which are unrelated to machinery. Costs incurred in design, engineering and supervision may not be related to machine hours so these costs would be averaged over all products rather than to those products which caused them.

Another allocation base beginning to find favour is material dollars. It has the benefit over machine hours that data on material costs is already captured by the accounting system. On the other hand, special procedures would have to be adopted to gather machine hour data thus making this option more costly.

The disadvantage of using material dollars is even more pronounced than that of machine hours. Material dollars bears no relationship to costs such as supervision, machinery maintenance, quality control and so on. Accordingly, significant distortions would be introduced if material dollars was used to allocate these costs.

On the other hand, material costs have some influence on procurement, storage and transportation costs. These costs would be allocated with some degree of accuracy.

B. Multiple Allocation Bases

In order to better capture the complexity of production processes, companies could segment their overhead into pools relating to different bases.[35] Some costs such as supervision would be related to direct labour so could be allocated by direct labour

35. Cooper R. and R.S. Kaplan, "How Cost Accounting Distorts Product Costs", Management Accounting, April 1988, p. 22.

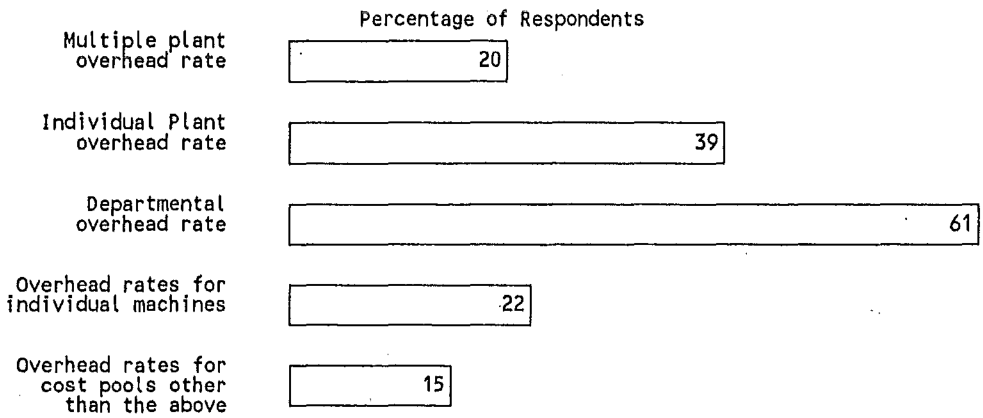
hours. Some would be related to the receipt, checking, storage and issue of materials so could be allocated by material dollars. The balance such as depreciation, power and maintenance is related to machinery so could be allocated using machine hours. This process of the simultaneous use of multiple allocation bases enables more detailed cost allocations to take place.

Some companies are even determining allocation rates for individual machines which will lead to an even higher level of accuracy in cost allocations. This is made possible by the use of computers to capture machine time accurately.[36]

Some companies are reported as getting an improvement in product costs by using different allocation rates for different plants or different departments within a plant. Separate rates may also be developed for other cost pools besides plant, department or individual machine cost pools. To give some idea of the use of these different methods figure 1 shows the results of a 1987 study for the NAA.[37]

Figure 1

TYPES OF OVERHEAD RATES



* Percentages sum to more than 100% because many respondents use more than one type of overhead rate.

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36. Schwarzbach H.R. and R.G. Vangermeersch, "Why We Should Account for the 4th Cost of Manufacturing", Management Accounting, July 1983.
37. Hendricks 1988, p. 27.

However, these solutions to the problem of product cost distortions still use volume-related allocation bases. If overhead costs are not being driven by volume factors but are instead driven by the diversity and complexity of products, then the resulting product costs will still be inaccurate. A more appropriate method of tracing costs is necessary

The solution is to use the transactions derived from the complexity of the production process and the diversity of the product lines to trace costs to products. This costing model is called **Activity-Based Costing** (ABC) and will be discussed in detail in the next chapter. ABC uses the activities that a product demands to trace the costs to that product. The use of this cause and effect chain increases the accuracy of product costs. While it is a new product costing method, some of its basic concepts have been in use for some time.

SECTION 3

VIII. Historical Developments Underlying Activity-Based Costing

Activity-Based Costing is a general term which covers the product costing process which fulfils the need for strategic product cost information. Its most well known advocates are two Harvard academics Robin Cooper and Robert S. Kaplan but the ideas underlying it relate back to the early 1970's.

Earlier investigation into the role of activities in decision making was carried out by George Staubus. George Staubus who, in 1971, wrote "Activity Costing and Input-Output Accounting"[38] looked at the relationship between inputs, production

38. "Activity Costing and Input-Output Accounting" in Staubus 1988.

activities and the outputs of the production process. He acknowledged the difficulty of defining what is meant by an activity but considered that:

> *"... the general idea is to keep an account for each function, operation, task, or process about which management may need information for managing the entity. Each activity must have an intended output, or objective, which may or may not be divisible into units. Each activity must also have inputs - means of accomplishing objectives. Inputs are measured at their cost - the sacrifices of alternative service potentials involved in applying the commodity or service to this activity. Output may be expressed in non-monetary units but must also be measured in monetary units."*[39]

In particular, the method Staubus advocated for calculating activity accounting is similar to that proposed by Cooper and Kaplan.[40] Where he differs from the later ABC model is in the requirement to compare inputs and outputs in order to measure economic efficiency. While this is a worthwhile goal, at its present level of development ABC is more appropriate for determining standards for strategic decision making, rather than performance measurement.

Murray Wells was another early researcher into activity costing, although without covering specific product costing processes.[41] Wells believed that product costs were not relevant to decision-making because overhead allocations are unnecessary.

Wells was interested in integrating financial and management accounting. He suggested that for internal decision making and control, activities be aggregated against the responsible manager and that "... all costs and revenues are classified according to activities".[42] He sought to avoid allocation problems by using current cash equivalents to value assets. From his model, product costs could be

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39. Staubus, 1988, p. 23.
40. Staubus, 1988, p. 25.
41. Wells, 1976.
42. Wells, 1976, p. 31.

determined by summing the value of the activities to which asset values are attached.

Activity costing relates to J. Maurice Clark's *different costs for different purposes*[43] idea by focusing on the various roles of product costing. A subset of activity costs relevant to a particular decision could be extracted from the full set of activity costs of a product to determine an appropriate cost for that decision. "Product costs are readily ascertainable once the activities arising from a particular decision are identified and the period in which they took place is known".[44] For example, incremental costs may be important to an increase in production whereas total costs may be relevant to a quotation decision. Wells, however, seems to be more concerned with a "macro" view of activities, Eg *the activity of selling* or *the activity of production* rather than with a detailed consideration of the individual activities which go into making a product.

Another early writer who was influential in developing the ideas underlying ABC was Shillinglaw who introduced the idea that costs can be avoidable. He called this the concept of *Attributable Costs*.[45] It is the "... long-run counterpart of average variable costs ... [and]... represents an attempt to bring the long-run marginal costs concept into a practical context and make it operational".[46] The attributable cost concept is based on the idea that a cost will be avoided if a product or function (this could be interpreted as activity) is discontinued without changing the supporting organisation structure.[47] In his later writing he said:

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43. J. Maurice Clark, Studies in the Economics of Overhead Costs, University of Chicago Press, 1923, pp 67-69, pp 175-203.
44. Wells, 1976, p. 34.
45. Shillinglaw G., "The Concept of Attributable Cost", Journal of Accounting Research, Vol.1 No. 1, Spring 1963.
46. ibid, pp 79-80.
47. ibid, p. 80.

> *The planning mechanism focuses on individual activities and groups of activities because management's resource-allocation decision are keyed to the activities that resources are or might be committed to. An activity is an action or set of actions requiring the use of resources in an effort to achieve an objective ... By controlling the activity structure, management is able to control the flows of resources. (author's emphasis)*
>
> *This is not always obvious. Some decisions seem to focus on organization units, as in decisions to open new branch offices... On closer analysis, however, it becomes clear that the decision focus is not the organization unit itself but the activities it encompasses or the means of carrying them out... The managerial question is how best to carry out this activity, or whether it is worth carrying out at all.*[48]

None of these early writers went beyond these broad concepts and attempted to develop a form of the ABC model which could be put into operation and tested for its validity. The major work in this area has been done by Robin Cooper[49], Robert Kaplan[50] and H. Thomas Johnson.[51]. Chapter 3 is based on the work of these three academics.

IX. Conclusions

Absorption costing is the most widely used of traditional product costing systems. However, its reliance of volume-based allocation systems has caused it to give distorted results. Evidence of these distortions is shown by actions such as the elimination of long run products and an excessive concentration on short run "customized" products. Managers spend excessive time endeavouring to reduce direct labour, where that is the allocation base, in order to reduce apparent product costs.

Traditional methods to overcome these distortions involve either changing the allocation base or using multiple bases. These will not work because the bases are

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48. Shillinglaw, 1982, pp 5-6.
49. Cooper 1987,1988-1989.
50. Cooper and Kaplan 1984, Kaplan 1987-1988, 1989.
51. Johnson, 1988, Johnson and Kaplan 1987.

still a function of production volume. These changes fail to capture the real driver of costs, product diversity and the complexity of the production process. Activity-based costing is suggested as an improvement on traditional costing systems because it makes use of all cost drivers including those that are not volume related.

Activity-Based Costing is a fairly recent development though its roots go back as the 1970's in work by Staubus, Wells and Shillinglaw. It is, in effect, a full costing system so is an extension and major improvement on the traditional product costing model. With improvements it may become the new standard product costing model.

CHAPTER 3

PRODUCT COSTING AND ACTIVITIES

A GENERAL DISCUSSION OF THE ACTIVITY-BASED COSTING MODEL

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PRODUCT COSTING AND ACTIVITIES

A GENERAL DISCUSSION ON THE ACTIVITY-BASED COSTING MODEL

I. Introduction

In order to survive, the long term goal of any firm must be to be profitable. While short term losses can be sustained, if a firm is not profitable in the long term then it will go out of business. In modern factories it is becoming clear that survival involves more than just ensuring that costs are less than revenues. New management methods which focus on standards of customer value mean that flexibility and quality in the production process is just as important as costs.[1] From this quality and flexibility comes an ability to meet customer needs which ultimately enhances the firm's profitability.

Management accounting must be able to tell managers whether products are delivering value to customers. More than that, managers must know whether "... their decisions will deliver value to the customer in excess of the cost of delivering that value".[2] Each activity which a company carries out to deliver products to its customers adds costs to those products. In doing so, the activity either increases the value of the product to the customer or decreases its profitability.

"Ideally, the way to achieve profitability is to manage activities".[3,4] Each activity consumes production resources and by efficiently managing activities, maximum benefit can be obtained from these resources. Pryor calls this **intervention insight.**[5]

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1. Johnson 1988, p. 23.
2. Ibid, p. 24.
3. Ibid.
4. Ostrenga 1990.
5. Pryor T.E., "Designing Your New Cost System is Simple (But Not Easy)", Journal of Cost Management for the Manufacturing Industry, Winter 1990, p. 45.

He suggests that evaluation of activities will improve company performance by:

- eliminating non-value adding activities
- setting performance and activity cost benchmarks relative to competitors.
- providing a comparison of activity cost and performance with "best in class" competitors.
- giving enhanced visibility to the total cost of all activities.
- providing a broader base for decision-making by evaluation of the activities themselves rather than focusing myopically on cost.[6]

Eliminating activities will cause a permanent reduction of costs.[7] Activities which add complexity to the production process are often not rewarded by increased product profitability and, in fact, companies are finding that reducing the complexity of products by producing fewer, but standardized, products can have benefits. General Motors, which recently reduced the complexity of their product line by offering fewer, standardized, products did so because they realized that

> *"... the cost of complexity was not compensated by the value of variety. Explicitly managing the trade-off between the value of variety in the market place and the cost of complexity in the factory requires an accurate assessment of product cost".*[8]

The reason that activities exist is that they are demanded by products. Every product, whether a manufactured product such as a motor vehicle, or a service such as banking, requires specific activities. For the purposes of this thesis, I will only consider manufactured products but this does not limit in any way the applicability of the model to intangible products.

6. ibid, p. 46.
7. Ostrenga 1990, p. 42
8. Shank and Govindarajan 1989, P. 90.

Each activity consumes production resources. By identifying the resources consumed by each activity and the activities consumed by products, the focus of activity accounting can be extended to calculate accurate product costs. These costs represent the sum of a product's share of the cost of production resources. In other words, products cause activities, activities incur costs and these costs are traced back to products via the same causal links.

Activity-based costing (ABC) is based on a long term view of cost behaviour. This means that all costs are treated as variable. Unlike short term variable costs which vary with volume changes, "... [l]ong term variable costs vary with measures of activity but not instantaneously".[9] In other words while there is a lag in the process, costs change eventually as activities change. Eg, if the number of production runs is decreased, set up activity is also decreased. Salaried set up engineers are not immediately made redundant but, over time, their numbers will fall.[10]

In an era of increasing automation and high fixed costs, traditional volume based costing systems distort product costs.[11] When inadequate product costing methods are used,

> *"... high volume products will be over-costed relative to low-volume products to the extent that overhead cost is driven by transactions which are not proportional to output volume. ... This opens the door for a niche strategy firm to attack the high-volume segment with aggressively low pricing ... [because it] ... will not have low-volume products to subsidize".*[12]

The managers of a multi-product firm, when looking at its costs, assume that the firm cannot compete in the high-volume segment so they concentrate on low volume products. Overheads are pushed even higher and are largely charged back

9. Drury 1989, p. 61.
10. Drury 1989.
11. Cooper and Kaplan 1988
12. ibid

to high-volume products making them appear even less attractive and "... the downward spiral of profits begins"[13].

It is important therefore that managers have an accurate idea of what a firm's products cost it. Littler and Sweeting, in a CIMA based study of 25 firms, suggest that "[c]ost management systems were not accorded a high priority for development and refinement"[14] because of two related facts:

1. the difficulty of identifying true product costs .
2. the fact that the firms were so busy keeping up with technology that costing was forced into the background.

Activity-based costing offers an opportunity to redress this imbalance because, by its use of complexity based cost drivers, it focuses on the same technological factors which are important to engineers. ABC is seen by many in industry to offer competitive advantage because it uses relevant costs for decision making.[15]

This chapter is in three sections. The first section discusses activity-based costing, its definitions and some of the assumptions underlying the model. Section Two considers the main factors in activity-based costing implementations. The final section discusses benefits and limitations of the ABC model.

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13. ibid
14. Littler D.A. and R.C. Sweeting, "Cases for Change in Management Accounting Practice", Management Accounting CIMA, November 1989, p. 37.
15. Coopers and Lybrand sponsored conference on cost management, Management Accounting CIMA, December 1989.

SECTION 1

II. Definitions

Many of the terms used in ABC systems are not yet completely defined. In this sub-section, the most commonly used terms will be given their generally accepted definitions. The Computer Aided Manufacturing-International (CAM-I) definitions are the most widely used so where applicable, these will be adopted.

A. Activities

Activities are repetitive tasks performed by each specialized group within a company as it executes its business objectives.[16] This is based on the concept of activities adopted by CAM-I in which each activity is performed on a specific process.[17]

B. Activity Accounting

Activity accounting is "... the collection of financial and operational performance information about significant activities of the business.[18] This is a CAM-I definition.

It encompasses non-financial measures of performance plus two types of activity-based information: activity-based charge-out information and activity-based product cost information.

C. Activity-Based Costing

Turney's definition will be used:

> *Activity-based costing is an information system that maintains and processes data on a firm's activities and products. It identifies the activities performed, it traces costs to these activities, and then uses various cost drivers to trace the cost of activities to the products. These cost drivers (such as the number of*

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16. ibid.
17. Berliner and Brimson 1988, p. 6; Brimson 1987, p. 5.21.
18. Berliner and Brimson 1988, p. 6.

part numbers or the number of set-ups) reflect the consumption of activities by the products.[19]

Cooper defines the cost of a product determined by ABC as "... the sum of the costs of all activities required to manufacture and deliver the product".[20]

D. Cost Pools

A cost pool is the monetary value of a part of a particular production resource related to a specific activity demanded by the production process.[21] An example is **set-up** activity which is part of the engineering production resource. Another is purchasing activity, part of the logistics of the production process.

E. Activity Centre

An activity centre is defined by Cooper as a segment of the production process for which management wants to [separately] report activity costs.[22] It is a collection of cost pools, relating to each resource type used by the centre. An activity centre usually has some significant meaning for the company management in terms of its structure and performance and may often be a department. It is useful for interpretation of the data generated by the ABC system.[23]

F. Cost Driver

A cost driver is an activity or transaction which is a significant determinant of costs[24]. "Conceptually, cost drivers represent the cause-and-effect relationship between some activity and a set of costs".[25] The idea of cost drivers can be traced back to Alexander Hamilton Church who said "... it is readily seen that a large number of

19. Turney 1990, p. 40.
20. Cooper 1988 A, p. 46.
21. Drury 1989 p. 61.
22. Cooper 1989b., p. 40.
23. Beaujon and Singhal 1990, p. 56.
24. Drury 1989 p. 61.
25. Beaujon and Singhal 1990, p. 57.

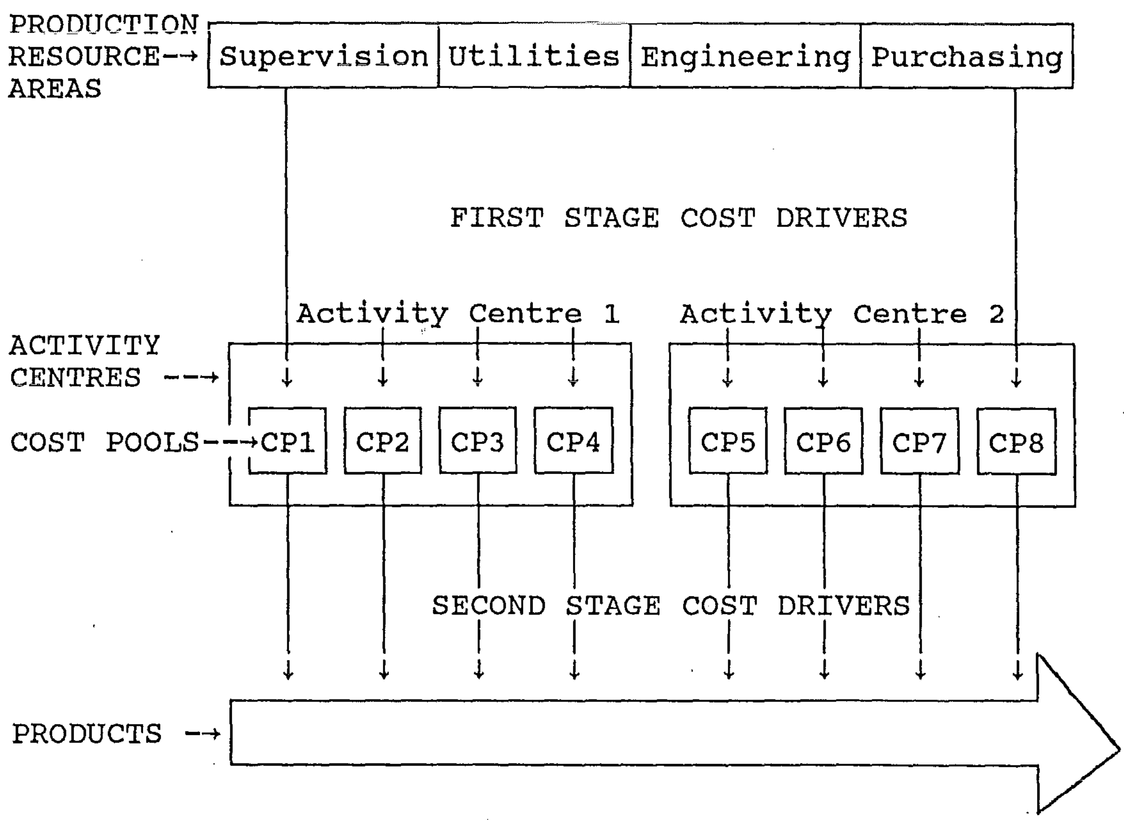
shop charges are by no means general in their real nature but can be narrowed down to definite points of incidence".[26] By this he means that there are costs which, because they are driven by some factor, can be traced to specific points by that factor.

G. Relationships

The relationships between, cost pools, activity centres and cost drivers is illustrated in Figure 1.

Figure 1

The Activity-Based Costing Relationship



26. Church 1908, p. 41.

III. Activity Information

ABC is only one of the ways in which activity information can be used for strategic decision making. Johnson says that there are two types of activity information which "... form the backbone of world-class management accounting".[27] They are

1. **Non-financial information** about sources of competitive value. This is information about the ability of the business to meet customer needs in terms of quality and flexibility.
2. **Strategic cost information.** This is information about the cost of the product mix and the activities which go into generating that product mix.

The relationship between these two types of information is illustrated in Figure 2.[28]

The role of activity information is to focus "... managers' attention on underlying causes (drivers) of cost and profit...".[29] This focus on activities allows managers to identify those which generate value and to endeavour to improve the efficiency with which they are carried out.[30,31] It also allows identification of activities which are not adding value so that they can be eliminated or at least minimised. By managing activities companies can achieve profitability because it is activities which produce **value** for the organisation.

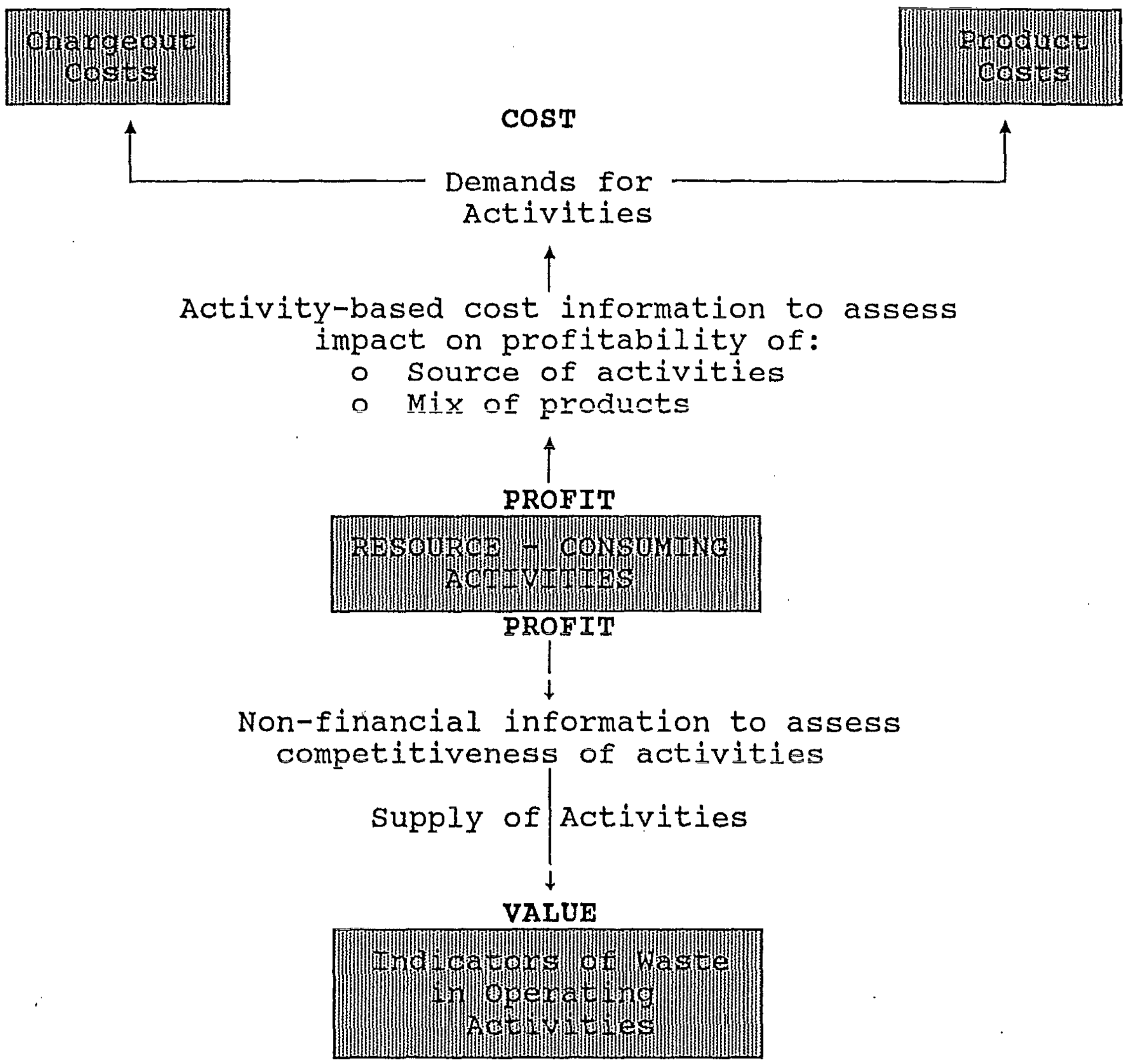
To illustrate the benefits of this process, consider a factory which has large work-in-progress inventories between each of the stages of production. By calculation of the cost of these inventories, it is possible to see that the firm is suffering through

27. Johnson 1988, p. 24.
28. ibid.
29. ibid.
30. Campi 1989.
31. Romano 1989a.

increased storage costs, interest charges and so on. However the question, "Why is inventory level so high?", is not so easily answered by the cost information alone.

Figure 2

Activity-Based Information for Managing Profitability



If, on the other hand, information is available about the activities carried out in the factory, the question can be answered. If the workers are asked why they need this level of inventory, they may answer that it is because of delays caused by setting up a machine for its next production run. If physical activity information is available about set-up times, then a concentrated effort can be made to reduce these times, thus having the effect of reducing the need for work-in-progress inventory. Once this process of improvement has begun, it naturally leads to more efficient production strategies such as Just-in-Time.[32] Just-in-Time systems eliminate the need for work-in-progress inventories altogether because nothing is produced until the next stage in the production line calls for it.

It can be seen from this example that,

1. the calculated cost of the inventory is only useful insofar as it identifies an area of cost which should be investigated.
2. investigation of the activities involved in production identified the area on which to focus to solve the previously recognised problem.
3. alteration of activity (set-up) levels had an impact on the cost of inventory.
4. management of the level of activity enabled management of cost.

Activity information systems provide two classes of information; control information and planning information.[33]

1. Control Information

Control information is obtained through non-financial measures of performance. These are measures of resources consumed by activities which produce value for customers. This enables focus on those activities which do **not** add value so that they can be reduced or eliminated. This will improve the profitability of the company and generate competitive advantage.[34]

32. See Schonberger 1982.
33. ibid.
34. Johnson 1988

2. Planning Information

Planning information is split into two types; activity-based charge-out information and activity-based product cost information.[35]

a) Activity-based charge-out information.

These are the prices which an activity charges other areas of the firm for its output. In other words, it is internal information or information used inside the company.

The purpose of this information is to enable users of the activity to have the ultimate say in the long term allocation of resources within the company. In this way, the manager of the activity is motivated to be constantly improving the cost effectiveness of his activity to remain competitive with outside suppliers.

For example, consider a computer bureau supporting three divisions. If a cost per hour is determined based on the various activities occurring within the bureau, this can form the basis for a charge-out rate (perhaps with a margin for a profit) for charging the three user divisions. Each division then pays an amount equal to the hours of computer bureau time it uses multiplied by the charge out rate. Provided the divisions can also purchase computer time outside the company, the bureau must price itself competitively to stay in business.

There are three main benefits of this process.

1. the divisions pay only for what they use.
2. the bureau will constantly scrutinise its activities to find ways to reduce them, eliminate them or look for other efficiencies in order to maintain its customer base.

35. Romano 1989a.

3. the bureau will have to supply the computer services which the divisions want or they will go elsewhere. This has the effect of maximising the benefit the company gets from its computer facilities investment.

b) Activity-based product cost information.

This is used by managers to select the mix of products which will maximise the company's profitability through maximising the efficient use of the its activities.

IV. The Objective of Activity-based costing

Despite the prevalence of the "different costs for different purposes" idea, there exists a "true", if impossible to measure, product cost based on a product's consumption of production resources. (A "true product cost" concept remains consistent with the different costs for different purposes idea because some components of the "true" cost may not be relevant to a particular decision).

The use of absorption and full costing models is an attempt to approximate "true" cost. A description and discussion of these two models can be found in Chapter 2. ABC attempts to get even closer than these two models to what Roth and Bothwick call "real product costs".[36]

ABC systems benefit from the database approach to costing which was developed by McNair, Mosconi and Norris[37] based on work by Nolan.[38] The bottom layer of data in this database is non-financial measures of activities representing economic events. These activities can be analysed in any form depending on the type of

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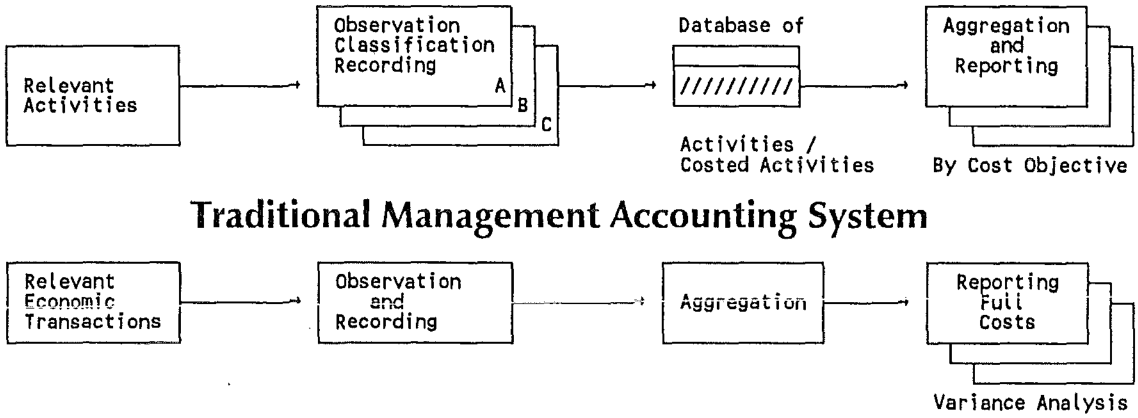
36. Roth H.P. and A.F. Bothwick, "Getting Closter to Real Product Costs", Management Accounting, May 1989.
37. McNair, Mosconi and Norris, 1988.
38. Nolan R, "Controlling the Costs of Data Services", Harvard Business Review, 1973.

decision required.[39] Conventional management accounting is based on "... traditional accounting data structures which do not support ad hoc information demands or provide the flexibility to change/update on demand".[40] The capability to collect, classify and aggregate this data has become possible through the ready availability of computing power.

Figure 3

Events Theory-Based Management Accounting System[41]



Through the use of this database, an increase in the accuracy of product costing can be achieved, especially when those costs are required for strategic decision making. Some companies have even been able to take advantage of the use of **actual** cost data rather than **budgeted** data.[42] This indicates that better standards are needed for comparison purposes and that engineered standards are unsatisfactory for the job.

ABC traces more costs directly to products thus enhancing the accuracy of product cost calculations.[43] It enables a better understanding of cost behaviour[44] but its major strength is best expressed by Johnson who said:

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39. Turney 1990, p. 40.
40. McNair et al, p. 220
41. Adapted from Figure 11.4, McNair, Mosconi and Norris, 1988
42. McNair et al discovered that companies are using rolling averages of prior actual costs to determine standards. p.164.
43. Roth and Bothwick 1989.
44. Drury 1989, p. 60.

> *Activity-based costing ... assumes that resource-consuming activities cause costs; products incur costs by the activities they require for design, engineering, manufacture, sale, delivery, and service. Activity-based costing traces costs to products through activities - essentially the activities that operating managers control with non-financial indicators of waste. By linking activities to financial costs, activity-based product cost information complements, therefore, the non-financial information operating managers use to achieve competitiveness in operating activities.*[45]

As most production resources are constrained in some way, managers must be able to make the most profitable use of them. By using the activities which use these scarce resources as part of its calculation processes, ABC enables managers to produce the mix of products which generates the most profit from resource consumption. Figure 4, based on the Schrader Bellows case[46], shows how the traditional product costing system presents a different picture of the profitability of products from that provided by an ABC system. Whereas the traditional system shows all products to be profitable, the ABC system indicates that in the long run most were not profitable.

V. The Role of Activity-Based Costing

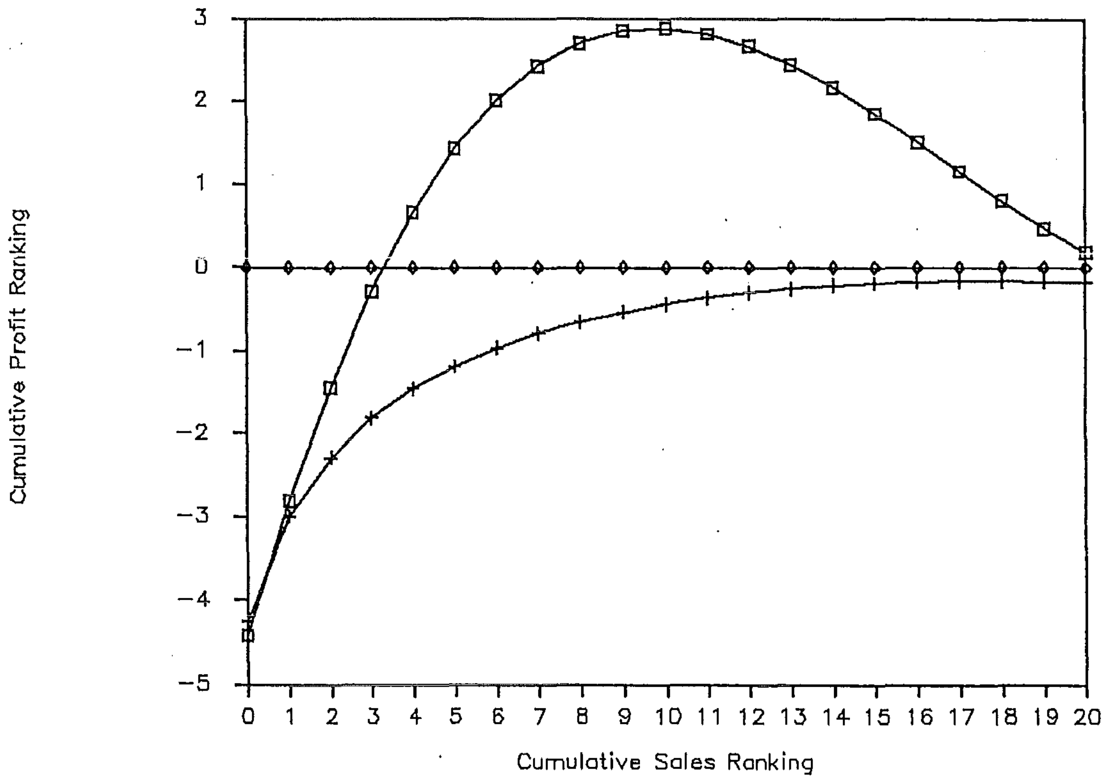
The role of ABC is to provide information for making strategic decisions rather than tactical valuations.[47] Therefore, it does not require the level of precision demanded by financial accounting inventory valuation methods.[48] Most decisions to produce a product are long term strategic decisions because of the long term commitment of resources they represent to managers. So it seems that managers prefer the full cost product costing method as a surrogate for the long run manufacturing costs of a product. In automated factories costs are indirect and tend towards being fixed rather than variable. However, managers, as users, are dissatisfied with the full cost

45. Johnson 1988, p. 29.
46. Johnson 1988, p. 29. This graph is based on data from Cooper R., "Schrader Bellows, A Strategic Cost Analysis", Harvard Business School case 9-186-272.
47. Turney has found that some firms have used ABC for more than strategic purposes [Turney 1990].
48. Campi 1989.

method in this environment.[49] See Table 1[50]. This dissatisfaction has been instrumental in the development of the ABC product costing model.

Figure 4

Product Profit/Volume Profile



Activity-Based Costing ■ Traditional Costing + Current Profit ♦

Products are Ranked by Profit

49. Drury 1989
50. Brimson 1987, p. 5.3, Exhibit 5-1.

Table 1

Level of Satisfaction with Product Cost Information

Respondent	Satisfaction Level	Percentage
Users of Product Cost Information	Very Satisfied	3%
	Reasonably Satisfied	31%
	Needs Improvement	53%
	Dissatisfied	9%
	No Response	4%
Total Dissatisfied		**62%**
Preparers of Product Cost Information	Very Satisfied	14%
	Reasonably Satisfied	32%
	Needs Improvement	47%
	Dissatisfied	7%
	No Response	0%
Total Dissatisfied		**54%**

Short run products require more indirect costs than long run products because they demand more specialised production resources yet this fact may not be apparent when traditional absorption costing models are used.. To illustrate this distortion Kaplan uses the example of two ball point pen factories.[51]

> Consider two factories, A and B, identical in all respects, each with a production capacity of one million ball point pens. The market demand is for 1.1 million black pens. One factory produces only black pens and virtually saturates the market. The other factory, besides supplying 100,000 black pens, supplies to order a wide variety of different pens in different colours. Each of these custom colour pens has a relatively small production run e.g. 5,000 red, 1,200 green, 500 purple and so on.
>
> *Black pens cost more in factory B than in the factory A!*

51. Kaplan 1987, p. 7.14.

Why does this occur? There are two main reasons. Firstly, it is because production runs in factory B are interrupted to produce the small custom pen orders. Secondly, overheads are higher in factory B because of the greater need for expensive indirect staff such as chemists, schedulers, expediters and supervisors required to support the custom products. In addition, more inspection is required when new products go into production until the product meets its specification. As a result there are more activities per pen in factory B than in factory A. As these activities consume resources, they are costly and this cost flows into the pens.

In fact, "[t]he more the low-volume specialised products are emphasised the more the indirect costs will grow in the long-run. With a volume based allocation system most of this growth will be charged to the higher volume smooth running products".[52] This occurs firstly, because all overhead is averaged by the use of a single allocation base. Secondly, it occurs because longer run products have more of the allocation base, eg direct labour hours. Therefore more overhead is charged to these products.

VI. Cost Drivers

Costs are caused, not merely incurred.[53] Costs may be said to be driven so the term "cost driver" conveys this cause and effect relationship. "Capturing the economics of the underlying productions process and the way in which products demand activities requires using cost drivers which are measures of the activities performed on the product".[54]

52. Drury 1989, p. 63.
53. Ostrenga 1990, p. 42.
54. Cooper (2) 1988, p. 53.

Cost drivers are normally physical measures of some kind. They form useful non-financial indicators of the relevance of management accounting information to decisions.[55]

Cost drivers are used to trace costs to products. Where costs are short term and variable, they should be traced using volume based cost drivers such as machine hours, labour hours and material dollars. However, long term variable costs must be traced using activity measures which reflect the complexity of the production process ie the number of products produced and the complexity of individual product types.[56]

The key to the success of the ABC model is this use of cost drivers. A cost driver is some countable factor which causes costs in a particular production resource area, and is the force behind overhead costs.[57] The idea of cost drivers is not new, being seen in the insistence that the best allocation bases for indirect costs are those with a strong cause and effect relationship.[58] ABC takes this process further to require specific focus on cost drivers as a means of measuring physical activity in cost centres. "Cost drivers are replacing the antiquated concepts of overhead absorption".[59]

Research has shown that good cost drivers must meet certain criteria:

1. They must be simple to understand, countable and easy to extract from existing data.
2. They must be strongly correlated with the output of the activity centre. Correlation is used in the sense that the driver is correlated

55. Smith 1990.
56. Cooper 1987a., Cooper 1987b., Kaplan 1987, Drury 1989, Foster and Gupta 1988, P. 17.
57. Drury 1989.
58. Horngren and Foster 1987, p. 413; Davidson et al, 1987, p. 189; Drury, 1985, p. 64.
59. Campi 1989 p. 51.

with the average output, rather than individual products. The emphasis here is on getting the relationship approximately right rather than exactly wrong.

3. An excess of cost drivers will be found so their numbers must be reduced to the minimum possible to avoid the costing process becoming "... too difficult to handle and understand".[60]

In addition, cost drivers must be strongly correlated with the costs in their associated cost pool. They must be visible so that they can be used to adjust the level of cost in their associated cost pool. Finally, they must induce the desired behavioural effects.[61] Care must be taken that the behaviour induced is beneficial. An example of inducing desired behaviour is to use number of parts as a cost driver to induce engineers to reduce parts count.

Normally cost drivers will be transactions of some kind. Miller and Vollmann identified three different types of transactions which occur in what they call the Hidden Factory.[62] The Hidden Factory generates overheads within the factory without anyone being aware of it. This is because costs are driven by transactions, not production volume which drives other, more direct costs.

These transactions relate to the hidden benefits customers buy with their product such as quality, delivery on time, variety, improved design etc. Miller and Vollmann identified four different classes of transactions.[63] They are:

60. Romano 1989a. p. 66.
61. Cooper 1989/1, p. 42.
62. Miller and Vollmann, 1985.
63. ibid, pp. 144-145.

Logistical Transactions

Logistical transactions are those required to order, execute and track the movement of goods and materials from one location to another. Examples are: receiving raw materials, shipping of materials and components and the associated data entry.

Balancing Transactions

Balancing transactions are those necessary to ensure that the goods and services ordered for production are equal to that demanded by production. Examples are: purchasing, planning and scheduling.

Quality Transactions

Quality transactions include all areas involved in quality management from the setting of product specifications to quality inspection at the end of the production line.

Change Transactions

Change transactions include all transactions to change the manufacturing information system to suit changes in the manufacturing process. Examples are: engineering change notes which cause changes in bills of materials. Bills of materials are also affected by changes in material specifications.

An idea of the relative importance of each of these transaction types can be shown by the amount of overhead related to each. Table 2 shows the results Miller and Vollmann found when they studied the electronics industry.

Table 2

Relative Importance of Transaction Types

Transaction Type	Percentage of Related Overhead
Logistical Transactions	10% - 20%
Balancing Transactions	10% - 20%
Quality Transactions	25% - 40%
Change Transactions	20% - 40%

Management of these transactions as the countable feature of activities can lead to better management of overheads. Miller and Vollmann suggest that **transaction analysis** will enable elimination of unnecessary transactions and improvement in the efficiency with which important transactions are carried out. Transaction analysis can improve the stability of the manufacturing process by planning to finest detail. By this means, transaction levels stay relatively constant avoiding the need for extra staff to cope with unexpected peaks. Balance transactions are important in this context. Increased automation and systems integration enables transactions to be processed by machines rather than manually. An important saving in transactions occurs when redundant entry of transactions is eliminated by integrating data through computers as a transaction is entered once only and the computer provides information on the transaction to every activity which needs it. However, care must be taken to avoid increasing overhead cost through unnecessary complexity of machinery or automation of unnecessary tasks.

A. Selection of Cost Drivers

> *"Activity-based costing systems achieve their improved accuracy over traditional volume-based systems by using multiple cost drivers (instead of one or two) to trace the cost of production activities in a process to the products that consume the resources used in those activities".*[64]

However, because there are so many potential cost drivers it is essential that the minimum number possible are used consistent with the required level of accuracy.

64. Cooper 1989a., p. 34.

Cooper suggests that this requires two separate but interrelated decisions: how many cost drivers and how are they to be selected.[65] The interrelationship is caused by the fact that the type of cost driver affects the number required. The higher the level of accuracy, the more cost drivers required.

In order to simplify the costing system and reduce the number of drivers to a minimum, the costs of two or more activities which each have a separate cost driver, can be combined into a single cost pool, allocated by one of those cost drivers. Whether this is feasible can be decided only by consideration of the distortion caused by the combination. Very little research has been done into this area but Cooper believes there are three factors which must be considered in order to make the decision. His arguments, though not conclusive, serve as a good starting point.[66] The factors are:

- Product Diversity
- The relative costs of the activities to be combined
- Volume Diversity

Product Diversity

Products are diverse if they consume activities in different amounts. The level of diversity between two products with respect to two activities can be measured by calculating the ratio of the two activities each consumes and dividing one into the other thus giving a diversity coefficient.

Relative Costs of the Activities

The relative cost of two activities can be determined by calculating the percentage which the cost of each is, of their sum. The level of distortion can

65. ibid.
66. ibid, p. 35

be determined by comparing the ratio of the amount of the combined pool which is traced to each product to the ratio of the cost of each activity in the combined pool.

Volume Diversity

If products are produced in different sized batches, then distortions will occur if activities are combined and only one cost driver is used to allocate the costs. For example, product A might be produced in batches of 10, whereas product B might be produced in batches of 200. Both products take one hour to inspect, but product A takes 5 times as long to package for shipment as product B. Product A is a high intensity user of packaging.

The level of distortion when both cost pools are combined into one and traced using one driver can be determined in a similar way to product diversity. A volume diversity coefficient is calculated by dividing the batch size of the highest user of one activity (in the example this activity is packaging) by the batch size of the lowest user of the same activity. In the example, this would give a volume diversity coefficient of 20 (200/10).

The measures Cooper proposes are unnecessarily complicated and it is difficult to understand how they work without an example. It seems more likely that the factor which most accurately indicates the level of distortion is the ratio between the activity and its driver. If two pools have the same ratio then they can be amalgamated. The degree to which their ratios differ indicates the level of distortion, and is best illustrated by the following example adapted from Cooper's discussion.[67]

67. ibid, p. 35.

Distortion Example

Two products, A and B each require both machining and inspection. As total costs are determined from the cost per machining hour and cost per inspection hour, only hours will be used rather than dollars.

Referring to Table 3 Part A, when the ratio between total machine hours and its associated activity, machining, is the same as the ratio between inspection hours and its activity, inspection, (ie 2:1), the amount of inspection allocated using machine hours is correct. This is shown by the ratio of actual to allocated as being 1:1 for both products. The ratio of the initial ratios is also 1:1.

Distortion occurs as soon as each activity has a different ratio with its driver. This is shown by Table 3 Parts B and C. If the ratio of machine hours to machining is greater than the ratio of inspection hours to inspection then the **higher user** of inspection is **Over-costed** and the **lower user** is **Under-costed** (see Part B). If, on the other hand, the machine ratio is less than the inspection ratio then the reverse applies (see Part C).

Table 4 confirms these findings by illustrating that the batch size is unimportant. *It is the total machine hours which is the key factor.*

Table 3

Calculation of Ratios With Alterations to Volume Cost Driver

Part A.
Machining ratio = inspection ratio .

Product	(a) Machine Hours	(b) Inspection Hours	(c) Batch Quantity	(d) = a. * c. Total Machine Hours	(e) Allocated Inspection Hrs	(f) = b./e. Ratio Actual /Allocated
A	1	10	50	50	10	1
B	5	5	5	25	5	1
TOTAL	6	15	55	75	15	

Allocation Rate $= \frac{15}{75} =$ 0.2 Hours

Ratio of Actual cost ratio to Allocated cost ratio = 1

Part B.
Machining ratio > inspection ratio .

Product	(a) Machine Hours	(b) Inspection Hours	(c) Batch Quantity	(d) = a. * c. Total Machine Hrs	(e) Allocated Inspection Hrs	(f) = b./e. Ratio Actual /Allocated
A	1	10	50	50	13.636	0.73
B	1	5	5	5	1.364	3.67
TOTAL	2	15	55	55	15.000	

Allocation Rate $= \frac{15}{55} =$ 0.273 Hours

Ratio of Actual cost ratio to Allocated cost ratio =0.2

Part C
Machining ratio < inspection ratio .

Product	(a) Machine Hours	(b) Inspection Hours	(c) Batch Quantity	(d) = a. * c. Total Machine Hrs	(e) Allocated Inspection Hrs	(f) = b./e. Ratio Actual /Allocated
A	1	10	50	50	7.5	1.33
B	10	5	5	50	7.5	0.67
TOTAL	11	15	55	100	15.0	

Allocation Rate $= \frac{15}{55} \doteq$ 0.273 Hours

Ratio of Actual cost ratio to Allocated cost ratio = 2

Table 4

Calculation of Initial Ratios With Batch Sizes Reversed

Part A
Machining ratio = inspection ratio.

Product	(a) Machine Hours	(b) Inspection Hours	(c) Batch Quantity	(d) = a. * c. Total Machine Hrs	(e) Allocated Inspection Hrs	(f) = b./e. Ratio Actual /Allocated
A	20	10	5	100	10	1
B	1	5	50	50	5	1
TOTAL	21	15	55	150	15	

Allocation Rate = $\frac{15}{150}$ = 0.1 Hours

Ratio of Actual cost ratio to Allocated cost ratio = 1

Part B
Machining ratio > inspection ratio

Product	(a) Machine Hours	(b) Inspection Hours	(c) Batch Quantity	(d) = a. * c. Total Machine Hrs	(e) Allocated Inspection Hrs	(f) = b./e. Ratio Actual /Allocated
A	40	10	5	200	12	0.83
B	1	5	50	50	3	1.67
TOTAL	41	15	55	250	15	

Allocation Rate = $\frac{15}{250}$ = 0.06 Hours

Ratio of Actual cost ratio to Allocated cost ratio = 0.5

Part C
Machining ratio < inspection ratio

Product	(a) Machine Hours	(b) Inspection Hours	(c) Batch Quantity	(d) = a. * c. Total Machine Hrs	(e) Allocated Inspection Hrs	(f) = b./e. Ratio Actual /Allocated
A	1	10	5	5	1.364	7.33
B	1	5	50	50	13.636	0.37
TOTAL	2	15	55	55	15.000	

Allocation Rate = $\frac{15}{55}$ = 0.273 Hours

Ratio of Actual cost ratio to Allocated cost ratio = 20

B. Interpretation of Cost Drivers as Activities

Ideally cost drivers should be synonymous with activities. The reality is that sometimes a so called "cost driver" is in fact only "... used to allocate costs rather than capture the true cause-and-effect relationship between activities and costs (as the conceptual model of ABC implies)."[68] This is a reflection of the practical difficulties of measuring cost drivers and their associated cost pools rather than flaws in the model. It does, however, suggest that caution should be used when interpreting activity information.

SECTION 2

VII. Implementing Activity Accounting Systems

A. General Factors to Consider

The primary role of ABC is to aid strategic decision making but this is not the only role for which it may be used. Innes and Mitchell found in a study of ABC implementations at three UK firms that the "... purpose and use of ABC has been designed to use the cost driver-based analysis to assist process and costs control rather than simply to produce a revised set of product costs".[69] The uses to which the system will be put will have an influence on the level of accuracy desired from the model.

The cost of revising the product costing system must also be considered. An ABC system should be implemented only if the benefits of increased accuracy in product cost information exceed the cost of obtaining it.[70] While acknowledging that these

68. Beaujon and Singhal 1990, p. 60.
69. Innes and Mitchell 1990 p. 29.
70. Cooper 1988b. pp. 46-48.

benefits are hard to quantify, an attempt must be made because implementation costs can be high.[71]

B. Planning Phase

In this phase, at least six important decisions must be made before beginning an ABC implementation.[72] They are:

1. Should the ABC system be integrated with the existing accounting system or should it stand alone? This will firstly have implications for financial reporting in that the auditors will have to agree to the use of ABC for inventory valuation. Secondly, stand-alone implementations are faster to implement but the problems of double inputting of data and the difference in reported costs between the two systems must be resolved.
2. Should a formal design be approved first? Until details of activities are known, a plan cannot be properly developed but some sort of plan will assist in getting senior people behind the project.
3. Who should take "ownership" of the final system? Ideally, the system should be developed by an interdisciplinary team but should be owned by the management rather than the financial side of the company. This will enhance commitment to the system and belief in the product costs it produces.
4. How precise should the system be? Cooper says that "It is better to be approximately right than exactly wrong".[73] Turk found that the accountants at Harley Davidson, in "... their discussions with manufacturing personnel ... learned that their data did not necessarily

71. Comalco estimated that the cost of their system ran into millions of dollars. [Interview with Tim Boyle, Comalco Accountant].
72. Cooper 1990 p. 33.
73. ibid, p. 35.

have to be precise, but it did have to be relevant".[74] This premise relies on the idea of increasing the accuracy in product costs rather than either accepting incorrect costs or trying for impossible-to-attain "true" costs. The focus of ABC is, therefore, on increasing the relevance of accounting information. In all cases there will be a trade off between the costs of obtaining more accurate information and the relevance of the results.

5. Should the system report historical or future costs? The question addressed here is *do we want to know what it cost us last year or do we want to guess what it will cost us next year?* The management of Comalco decided on the first option and applied current year costs to their ABC system which is then used to make strategic decisions for the following year. Four factors affect this decision: Firstly, how quickly the firm's production processes are changing. Secondly, use of last year's costs could confirm management intuition of product costs at that time. Thirdly, ABC costs can be compared with traditional costs if last year's costs are used. Fourthly, availability of data may be critical.

6. Should the initial design be complex or simple? A cost/benefit analysis must be part of this decision.

In this phase it is useful to document the manufacturing processes as a first step to defining activities and cost centres.

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74. Turk 1990, p. 35.

C. Interview Phase

In this phase, each manager is interviewed to establish three factors.

1. The activities which occur in each centre, each of which will have an associated cost pool.
2. The amount of effort going into each of these activities is determined by using first stage cost drivers in order to calculate the size of the associated cost pools. If these are unknown, the size of the pools can be determined by the number of staff employed on each activity. The justification for this is that most first stage cost drivers are staff related.[75]
3. The most appropriate cost driver for each activity.

This information is gathered by asking such questions as "Why are there eight engineers in this department instead of seven?" These questions force managers to focus on the tasks, being carried out in their areas. It relies on the premise that an increase in workload causes the hiring of extra staff. Foster and Gupta support the use of "headcount" related cost drivers as the drivers of total manufacturing overhead. Their 1988 study found that average headcount was second out of the top seven variables which explained total manufacturing overhead, while the other six variables were all highly correlated with average total headcount as shown by Table 5.[76] Table 6 shows how the pairwise correlations of these variables with total manufacturing overhead is similar to that of average headcount with total manufacturing overhead.

75. Foster and Gupta 1988.
76. ibid, p. 14.

Table 5

Pairwise Correlation With Total Manufacturing Overheads

Rank	Variable Name	Spearmans Correlations	Pearson Correlations
1.	Number of active part numbers	.96	.97
2.	Average total headcount in manufacturing	.94	.97
3.	Total manufacturing space	.87	.90
4.	Direct labour dollars	.85	.94
5.	Total ending inventory	.84	.90
6.	Installed machinery and equipment	.89	.91
7.	Direct material dollars	.73	.79

Table 6

Pairwise Correlation With Headcount

Rank	Variable Name	Spearmans Correlations	Pearson Correlations
1.	Number of active part numbers	.93	.97
3.	Total manufacturing space	.88	.87
4.	Direct labour dollars	.86	.95
5.	Total ending inventory	.89	.93
6.	Installed machinery and equipment	.83	.91
7.	Direct material dollars	.75	.73

D. Calculations

If this is a first time implementation, the product costs calculated using the new system must be compared with those calculated by the existing system. The differences must be quantified to determine whether there is a benefit from proceeding with the Activity costing implementation.

To ensure that the calculated product costs are consistent with the company accounting system, a reconciliation must be made between total costs of the company and total cost of activities.

E. Approval and Implementation

Management approval must be sought and this is often the most difficult process of all.[77] Once approved, the system can be installed and should be updated annually with reassessment of both activities and cost drivers together with movement in resource costs and cost driver quantities.

VIII. Long Term Product Costs Using the Two Stage Costing Process

There are benefits in splitting the product costing process into two stages:

1. **Split costs into separate cost pools within activity centres.**
2. **Trace the cost pools to products in proportion to the amount of each resource consumed by each product.**

A. Stage One

The production process is split into activity centres, each of which has a series of related activities. Activity centres are segmented into activities which "... consume resources in a constant ratio to each other".[78] Each segment forms a cost pool within the activity centre.

So if there are ten activities required for production, the total cost of the production process will be divided into ten separate cost pools, each varying in size depending on the cost of each activity. However, some of the cost pools may be amalgamated into activity centres for control purposes. It is important to note that the costs are traced to the product from the cost pools, not the activity centres.

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77. In the Schrader Bellows case, the management refused to accept that the costs were accurate. [Cooper R., "Schrader Bellows, A Strategic Cost Analysis"; Harvard Business School case 9-186-272]. The behavioural impacts of product costing on strategic decision making cannot be ignored.

78. Cooper (7), 1987, p. 39.

This first stage requires the identification of cost pools and determination of the dollar value of resources tied up in each cost pool. Five design choices must be made at this stage:[79]

1. Aggregate the actions into activities

   Actions have to be accumulated into activities because it will normally be too expensive to track them individually. At what stage a group of actions can be called an activity is an arbitrary point chosen by a costing team and depends on the level of accuracy they wish to achieve. The higher the level of aggregation of actions, the lower the level of accuracy which the cost driver will achieve when tracing that pool to the product.

   For example if there are three actions: a) process raw material requisition, b) pick part from storage bin, c) deliver to production line, they could be called the activity, "delivery to production". Alternatively, each could be called a separate activity on its own.

2. Reporting the cost of each activity.

   Having decided upon level of aggregation of actions into activities, a decision must be made on whether the resource consumption of each action is to be reported separately or amalgamated into one cost pool. In the example in the previous paragraph, the resource consumption of all actions could be either placed in one cost pool relating to delivery to production or into three individual cost pools relating to each individual activity.

   This decision should be based on weighing the value of the information available from separate recording of every action against the extra complexity of the costing system.

79. Cooper 1989b.

3. Selecting the first stage allocation bases.

This requires selection of first level cost drivers. The easiest method is to choose "headcount" as the driver. This means that a resource is divided up in terms of the number of staff employed in each activity. However, there are likely to be distortions because the machines used by some staff may be more complex and expensive than those used by others. Alternatively the resources consumed by each activity can be directly measured.[80] This is more expensive but more accurate. If implementation costs are not an issue, each staff member can be required to keep a log of his activities and these logs can be analysed to determine the key activities performed in a given activity centre. A cost/benefit test may be needed to decide which of these options to use.

Example (using head count as the first stage cost driver)

Total Production Resource Cost	$300,000
Total Staff	10
Allocation per staff member	$30,000

Cost Pool	No. Staff	Pool Size
Cost Pool 1	5.0	$150,000
Cost Pool 2	3.5	$105,000
Cost Pool 3	1.5	$ 45,000

4. Identify the activity centres

This step is needed to enhance the information value produced by the costing system. The cost pools are aggregated for reporting purposes so that managers can assess the cost of running the activity centre separately from the costs of the individual activities.

80. ibid, p. 40.

5. Identify Second-Stage cost drivers.

   This is an important and difficult stage of the process. A high correlation between the cost pool and the driver is essential before it can be used. The best source of information on cost drivers is the expert departmental staff who are generally well aware of what causes costs in their activity centre. The decision about which to choose relates to the level of distortion which can be accepted. This distortion is determined by the amount of amalgamation of cost pools. (See section 2, part VI. Cost Drivers for a description of this process). In the following example, the term transaction will be used as a pseudonym for cost driver.

   Estimate the total number of transactions relating to each cost pool. Divide each total into the cost of its pool to determine a cost per transaction.

Cost Pool	No. Trx	Cost/Trx
Cost Pool 1	5,000	$30.00
Cost Pool 2	10,000	$10.50
Cost Pool 3	900	$ 50.00

B. Stage Two

In the second stage the costs are traced to the products. This involves 3 steps:

1. Determine the number of transactions which are generated by each product type for each cost pool. Multiply these quantities by the cost per transaction for each cost pool to determine the total share of the cost pool for a particular type of product. Note that if a product does not generate a particular cost driver transaction, it has no share of the associated cost pool traced to it.

Cost Pool 1 Cost per Trx $30

Product	No. Trx	Cost
Product 1	50	$1,500.00
Product 2	25	$750.00
Product 3	100	$ 3,000.00
...	...	...
...	...	...

Cost Pool 2 Cost per Trx $10.50

Product	No. Trx	Cost
Product 1	200	$2,100.00
Product 2	60	$630.00
Product 3	0	$ 0.00
...	...	...
...	...	...

2. Sum the cost over all pools to determine the total resource consumption by a particular type of product.

Product	CP 1	CP 2	..	CPn	Total
Product 1	$1,500.00	$2,100	..	$150	$12,500
Product 2	$ 750.00	$ 630	..	$500	$26,000
Product 3	$3,000.00	$ 0	..	$18,000	$75,600
...	...	...	...	...	
...					
...	...	...	...	...	
...					

3. Divide the total cost of each product type by the production volume for the period to determine an individual product cost. This cost can now be used to determine the profitability of each product and a production mix can be selected which will maximise total profit margin for the firm.

SECTION 3

IX. Limitations of Activity-based costing

There has been little research into the limitations of the ABC model with most research focusing on the actual process and the justifications for using the model.

The major weaknesses are based on conclusions drawn by Roth and Bothwick[81] and Innes and Mitchell.[82]

Firstly, it is unlikely that allocations can be eliminated. It is almost impossible to identify a useful cost driver for some costs and some allocation will be necessary. In addition, the link between some activities and products is impossible to see. In this case, costs should be traced to the activity demanding them rather than arbitrarily to products. Corporate promotion costs are a good example of this type of cost. Rent is another. In this case, sensible allocation bases are needed. Square metres occupied would be a sensible way of allocating rent costs but is still arbitrary with all of the associated problems caused by arbitrary allocations.[83]

Secondly, production resource costs tend to come from an accrual accounting system. This means that the costs fed into cost pools come from accounting information which is distorted by allocations between time periods.

Thirdly, some costs may be left out. If costs associated with activities such as marketing, advertising, distribution etc are not included then the product cost will be wrong. The solution is obvious; include all costs from all activities.

Fourthly, the behavioural implications of ABC are not yet understood and may motivate dysfunctional behaviour.[84] At Schrader Bellows, middle management refused to accept the ABC developed product costs because accepting them meant major restructuring of the company and loss of jobs.[85]

81. Roth and Bothwick 1989, pp 32-33.
82. Innes and Mitchell 1990, p. 29.
83. Thomas 1969, Thomas 1974.
84. Turney 1990, p. 41.
85. Cooper R., "Schrader Bellows, A Strategic Cost Analysis", Harvard Business School case 9-186-272.

Fifthly, ABC is still internally oriented in the same way as traditional costing systems. Therefore, care must be taken to ensure that external factors such as markets and customer needs are also taken into account when making strategic decisions.

Sixthly, there are practical difficulties in selecting and measuring cost drivers although these can be overcome by forward planning. Systems can be set up to capture cost driver information over time. Initially, redundant surrogate cost drivers and estimations can be used but as information is gathered the ABC system can be refined by incorporating more accurate cost driver data.

Finally, there is very little evidence yet that ABC improves profitability.[86] This is the major problem facing the model at the moment and only time can answer this difficulty.

X. Benefits

Businesses which have adopted the ABC model find its logic compelling.

> *"The appealing feature of Activity-based costing is that it seeks to explain what causes long-term variable costs. Traditional volume-based cost allocation systems define most overhead costs as fixed and unrelated to product decisions and therefore hide the factors that cause overhead cost to arise.".*[87]

Some businesses treat all costs as variable in the long-term.

> *"In my view there are no fixed costs in operating a business. There are only short term variable and long-term variable costs. Given sufficient time, all your operating costs can be varied."*[88]

Most companies operate in competitive markets where the market determines the price for particular products. An individual manufacturer has little impact on prices so it is essential that it knows what its products cost before it can decide how many

86. Bromwich and Bhamani 1988.
87. Drury 1989, p. 68.
88. Fergusson L., Manager of Countdown Supermarkets, quoted in the Press, 23 March 1990.

to make or even whether to make them at all. However, in the case of monopolies or producers of custom or one-off products, the cost may have to be used to calculate a selling price. Here accurate costs are even more important.

Four manufacturers who have adopted ABC at varying levels of complexity have found significant benefits. Tektronix Portable Instruments division[89] found that their ABC implementation improved their decision making by making the incremental cost of adding new parts available to engineers. It led to improved make or buy decisions and improved strategic decision making by providing marketing staff with more accurate product costs.

John Deere Component Works[90] found that their ABC system improved their decision making by improving process planning, eliminating low value parts and assisting in the rearrangement of manufacturing cells and departmental layouts.

Siemens Electric Motor Works[91] found that their ABC system improved their decision making by improving order acceptance based on the profitability of individual orders.

Hewlett Packard have found that their ABC system has the benefit that it allows decision-makers to think in physical terms in the same way as the engineers. When costing a product they can "... see that the process of physically assembling a

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89. Cooper R. and P. Turney, "Tektronix: Portable Instrument Division", Harvard Business School case 9-188-143, 144, 145 in Jeans and Morrow 1989, p. 44.

90. March A. and R.S. Kaplan, "John Deere Component Works", Harvard Business School case 9-185-107, 108 in Jeans and Morrow 1989, pp 43-44.

91. Cooper R. and K. Hopper Wruck, "Siemens Electric Motor Works: Process Orientated costing", Harvard Business School case 9-189-089, 090 in Jeans and Morrow 1989, pp 43.

product uses resources".[92] They found that engineers and accountants now talk the same language with no emotional conflict as a result of opposing viewpoints.

Benefits of ABC identified by Innes and Mitchell include improvements to process control, overhead control, budgeting and product design. See Table 7.

Table 7

Benefits of Activity-Based Product Costing Systems[93]

1. A different pattern of products is produced allowing re-evaluation of profitability.
2. Improvements of overhead control through control of associated activities.
3. Enhanced process control through measurement of cost drivers.
4. Improved cost effectiveness by comparing cost driver rates over time and between divisions.
5. Improved budgeting through better understanding of cost behaviour.
6. Improved product design through knowledge of cost driver costs.
7. Enhanced credibility of costing information.

ABC is proving popular because it mirrors the rapidly changing production environment better than traditional product costing systems. It enables a firm to get a competitive edge in an increasingly competitive business environment, and better represents the interdependencies between various disciplines in the plant compared to the responsibility centres used by traditional systems.[94]

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92. Berlant D., R. Browning and G. Foster, "How Hewlett-Packard Gets the Numbers It Can Trust", Harvard Business Review, Jan-Feb 1990, p. 182.
93. Innes and Mitchell 1990, p. 29.
94. Pryor T.E., "Designing Your New Cost System Is Simple (But Not Easy)", Journal of Cost Management for the Manufacturing Industry, Winter 1990, pp. 44-45.

XI. Conclusions

In a complex firm, manufacturing a wide range of products, it is the diversity and complexity of the production process which drives costs. Traditional costing systems using volume allocation bases such as direct labour hours distort product costs by being unable to capture diversity. Costs are caused and do not merely occur so an accurate costing system must capture the causal link between the cost driver and the cost. ABC identifies that causal link by costing the activities required for production and tracing those costs to products in proportion to the activities products cause, thus reducing the distortions in the product costing system to manageable levels.

ABC is not a revolutionary new system but rather an evolution of traditional systems using improvements and developments of the same techniques.[95] However, by its focus on activities rather than production volume, it presents a much more refined model for decision-making. While it represents a major increase in complexity, this problem is reduced by the data processing capability of computers. Because ABC systems are more sophisticated they can better capture the complexity of the production process. Provided that the system design is done properly, ABC will provide more accurate costs than a simpler traditional product costing system which assumes a simple relationship between costs and production volume.

The change in focus to activities has had such an impact on the usefulness of the information produced by the costing system that it could be part of a new paradigm of strategic cost management.[96]

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95. Bromwich and Bhamani 1988.
96. Shank J.K. "Strategic Cost Management: New Wine or Just New Bottles", Journal of Management Accounting Research, Vol 1, Fall 1989.

CHAPTER 4

THE PRINCIPLES OF THE ACTIVITY-BASED COSTING MODEL

AN ALGEBRAIC ABSTRACTION IN RELATION TO PRODUCT MIX DETERMINATION

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CHAPTER 4

THE PRINCIPLES OF THE ACTIVITY-BASED COSTING MODEL

AN ALGEBRAIC ABSTRACTION IN RELATION TO PRODUCT MIX DETERMINATION

I. Introduction

When managers are deciding on the mix of products they wish to produce, they should have a goal in mind. When that goal is profit maximisation, then they must be able to clearly identify those products which are profitable and those which are not. Accurate product costs are necessary for this task. In order to assist in the assessment of activity-based costing as a better method of determining product costs, this chapter will examine the mathematical principles which underlie the model when used for product mix decisions.

The goal of the chapter is to clarify the ABC product costing model. It will endeavour to identify the variables and their inter-relationships, and the underlying assumptions with a view to gaining insights into the model.

The ABC model discussed in this chapter is a general product costing model. While, most of the literature discusses ABC in a manufacturing context, the model is just as applicable for service organisations. Accordingly, while the manufacturing background is difficult to avoid, the model presented should be applicable to any profit-making enterprise.

This chapter is in four sections. Section 1 examines the definitions necessary for the model and the assumptions required for it to work for product mix decisions. Section 2 presents the mathematical principles inherent within the model in a product mix setting. Section 3 gives a numerical example and Section 4 attempts to draw some conclusions.

SECTION 1

II. Definitions

Resources are defined as those factors which are needed to enable the company to produce, market and distribute its products and administer all of the necessary processes to that end. Resources include all factors required to take raw inputs,[1] convert them into saleable products and place those products in the hands of its customers.

Each resource has an associated cost. Because activity-based costing relates to decision making and in particular, strategic decision-making, a decision-useful definition of cost is necessary. The definition must relate to wealth and economic facts, and therefore George Staubus' definition of cost will be adopted.[2]

> *Cost is an economic sacrifice, an outflow of wealth, by giving up asset value or incurring liability value.*[3]

This means that **cost** can be further defined as the sacrifice in money terms of resources consumed by activities.[4] (Because strategic decisions are long-term, all costs are assumed to be variable in the long term.) Costs vary with some factor which is normally an activity of some kind.

We shall divide costs into two types: Volume-related costs and Non-volume-related costs.[5]

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1. This will normally be raw materials of some kind but may be labour in the case of service organizations.
2. For a full discussion on the concept of cost as a sacrifice see Staubus 1988, pp. 13-18, pp. 191-198.
3. Staubus 1988, p. 192.
4. ibid, p. 197.
5. This distinction between volume and non-volume costs is not necessary for the model. The model can be generalised by classifying all costs as "activity costs" and volume then becomes only one of several cost causing activities. However, the separation into the two classes of cost firstly, shows the link with traditional costing systems and secondly, it adds clarity.

Volume-related costs are those costs which are driven by volume factors such as direct labour hours, machine hours or material dollars. They are the costs of resources which are easily traceable to individual products and which vary directly with production volume in both the short term and long term. The classical examples of volume-related costs are *direct material costs* and *direct labour costs*. In this model, the only volume-related cost which will be referred to will be materials costs, being the most important example of this class of cost.[6] Volume-related costs have not traditionally caused accountants any allocation agonies; nor are they a problem which ABC addresses.

Non-volume-related costs are also ultimately caused by individual products or product components but are not so easily attributed to those products. This class of costs relates to more indirect resources consumed by products. While these costs have an undeniable link with production volume, this link is so indirect that the costs cannot usefully be said to be caused by production volume except in the longest run. Instead, these costs are caused by various **activities** related to all of the processes the company must carry out. Each resource type may have its own unique set of activities. Examples of non-volume-related costs and their associated activities are:

- *'the Set-Up Department costs'* with the *'set-up activity'* and the *'take-down activity'*;
- *'the Engineering Department costs'* with *'prepare working drawings activity'* and *'the make prototype activity'* and
- *'the marketing department costs'* with *'the competitor evaluation activity'* and *'the distribution activity'*.

6. Because activity-based costing is more likely to be applicable in machine-paced factories where labour is a low percentage of total costs, direct labour is not incorporated into the model (although without loss of generality) because it is assumed to be incorporated into other resources.

It is the primary virtue of ABC that it offers a more detailed procedure for tracing these non-volume related costs.

Fixed Costs

It not possible to be doctrinaire about the non-existence of *'fixed costs'*: if a pool of costs can be found for which no cost driver exists (such as a janitor's or president's salaries, or power consumed in a creche, or a flat time-related licence fee) then it seems reasonable to continue to call these fixed costs. However these costs will be omitted from the present analysis. We believe ABC is silent on such ineluctably fixed costs.

Cost drivers are the key to the success of the ABC model. A cost driver is a physical factor, which may or may not be volume related which causes costs to occur. Frequently they are transactions of some kind such as set ups, payment vouchers and deliveries. A full description of cost drivers will be found in Chapter 3.

In this algebraic ABC model, **products** are items assembled for sale by a firm. Each product can be broken down into one or more **components**, which are sub-assemblies or intermediate stages not normally intended for the market (except in the limiting case of the one-component product). Components and products are the output of the production process.

A component is distinguished from a purchased part. A purchased part such as a tail lamp unit is a particular class of raw material which is purchased, already in a manufactured state. (An example of a raw material is steel sheet). A component, on the other hand, will always have activity costs associated with it as it moves through the required processes to prepare it for assembly into a product.[7]

7. A component may consist of a purchased part together with the activity costs resulting from its logistical transactions.

A. Assumptions Underlying Activity Based Costing

1. Activities are grouped within a resource centre. These activities are normally carried out by staff in that resource centre but can be related to processes carried out within the centre.
2. A sufficiently long-run view is taken so that all costs become variable. Therefore, if demand for a specific resource falls because the transactions driving it are reduced, the managers will reduce the size of that resource. There is assumed to be no lag in this process, which means that there is no idle capacity.
3. For each cost pool there is assumed to be a cost driver. There is a strong correlation between the cost pools of any resource and the cost drivers relating to them, and this relationship is assumed to be linear.
4. Cost behaviour of activities is reasonably stable over time. Product costs determined in the previous period are not materially misleading if used to guide decisions in the current period.[8]

B. General Assumptions

Additional assumptions are:

1. Managers will maximise the value of the firm for the benefit of the shareholders by maximising long-run profits.
2. Complementary products are able to be correctly identified.
3. Products have varying levels of complexity.
4. There are no constraints on production capacity in the long-run i.e. all demands for resources are met.
5. The company is price taker and therefore cannot influence the market price. It is possible with differentiated products that ABC could be used for pricing, however, this is excluded from the model.

8. Comalco recalculate their product costs annually and use the results for strategic planning for the following year.

6. Within the decision period, there is a fixed set of possible products able to be produced with the company's machines, skills capacity and technological resources.[9]

The most important factor influencing the assumptions in the model is the long-run view taken, which reflects the fact that most product decisions are long run requiring a long term commitment of resources.[10]

C. Increasing Relevance

There are two principal reasons why ABC should produce costings which differ from traditional allocation-based costings and which are more managerially relevant.

- The first reason is that product costings based on component costs (which in turn are based upon transactions, which in turn reflect resource consumption) impound more information about causality in the production process.
- The second is that product costing based on component costs can recognize the situation where there are long production runs of components shared between many products although individual products may have short production runs.

1. Product Costing Should be Based on Component Costs

A product which has *short* production runs requires more set-ups, more scheduling, more frequent issues of material and, in general, more effort from resource areas. This means that it consumes more resources than another which has long production runs and it is, therefore, more expensive to produce. However, if costing is based on the products themselves rather than their

9. This assumption is just for convenience in model building.
10. Johnson and Kaplan 1987, pp. 233-234.

individual components it is possible for misleading results to arise. This is because there are both long-run components and short-run components and short-run products sometimes include long-run components.

If a short-run product has its own unique components, it is possible for ABC to produce an accurate product cost when costs are traced to the product itself rather than its individual components. However, short-run products, using components which are also used by long-run products, get the benefit of resource costs being spread over the longer production runs of the components of the long-run products. This distorts the cost calculation for the short-run product.

The solution proposed is to cost individual *components* rather than products, then build up a product cost from the costs of components.[11] The ABC model has the capability to attribute economies of scale to all products using such cheap components. If more components can be manufactured which are common to both short and long-run products then cost savings can be made. "The shift to transaction-related costing identifies the much lower costs which derive from designing products with common (or fewer) parts and the much higher costs generated when large numbers of unique parts are specified for low-volume products".[12] It follows that costing should be carried out at the level of components rather than products.

11. Products may be an assembly of one or more types of components. The actual number of component types is not important to the discussion. The key is whether a component type is long-run or short-run.

12. Cooper and Kaplan 1988, p. 25.

2. Activity-based costing is a Multi-Stage Process

ABC is a two-stage process[13] but it should not be confused with the traditional two-stage allocation process. The latter involves the allocation of the costs of service departments to production departments and from there to products. In ABC, the stages relate not to 'departments' and products but to cost pools and products or components - 'sub-products', if you will. We can see these stages in two ways:

If we trace *causality* we could say that in the first stage (as components are made) transactions demand or generate cash-or-cost outflows and in the second, products demand components and third, components demand resources.

Or, if we are thinking in terms of *cost tracing*, we can see the firm's non-volume-related costs being traced first to **cost pools**, each homogeneous because it contains costs which correlate with changes in a single type of transaction, and then secondly into components. In this second stage, each cost pool is traced to each component in proportion to the number of transactions generated by that component. The costs of components are related to their complexity in the same way as are products. Components requiring more of activities such as set-ups, inspection and design work will consume more resources than those requiring less of these activities and are correspondingly more costly.

In a third stage, the component-costs are traced to each product in proportion to the number of components occasioned by that product.

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13. Cooper, 1987.

SECTION 2

III. The Product Mix Selection Model

A. Notation

In the model, the following notation will be used. It may be of assistance to refer to Figure 1 below.

Cost Flows

Total Non-volume-related costs (PR)

Total Direct Materials Costs (TM)

Let **R** be the vector of Resources $(R_1, R_2, \ldots, R_k)$

(We use R_k here to denote both the identity of the kth resource and also its monetary *magnitude*)

Let **F** be the vector of first stage cost drivers. Each cost driver relates to a particular resource: $(F_1, F_2, \ldots, F_k)$

(We use F_k here to denote both the identity of the kth cost driver and also its *magnitude*)

Let **L** be the vector of Homogeneous Cost Pools each relating to a different activity.

(We use L_p here to denote both the identity of the pth cost pool and also its monetary *magnitude*) $(L_1, L_2, \ldots, L_p)$

Let **T** be the vector of Transaction Types. Each transaction type relates to (is the cost driver of) a particular cost pool: $(T_1, T_2, \ldots, T_p)$

(We use T_p here to denote both the identity of the pth transaction type and also its *magnitude*)

Let **M** be the vector of Material types $(M_1, M_2, \ldots, M_t)$

(We use M_t here to denote both the identity of the tth material type and also its monetary *magnitude*)

Composition of Products

Let **X** be the vector of Products $(X_1, X_2, ..., X_i)$

Let **C** be the vector of Products costs relating to each product $(C_1, C_2, ..., C_i)$

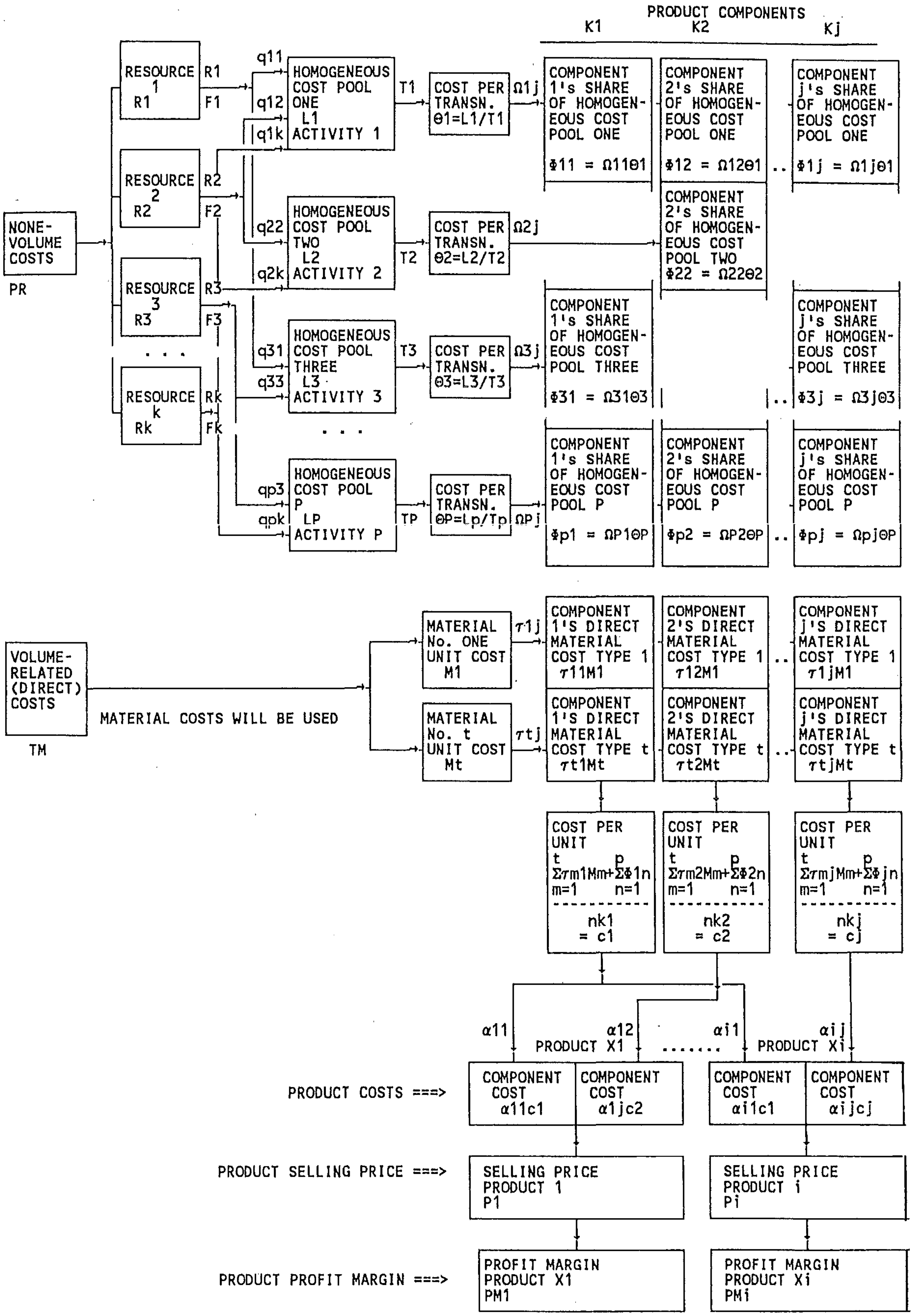
Let **P** be the vector of Selling Prices relating to particular products $(P_1, P_2, ..., P_i)$

Let **K** be the vector of Component types $(K_1, K_2, ..., K_j)$

Let **c** be the vector of component costs relating to each component $(c_1, c_2, ..., c_j)$

Figure 1 is a diagrammatic representation of the Activity-based costing process which shows the relationships between the variables. These relationships will be expressed algebraically in the rest of the chapter.

Figure 1
DIAGRAMMATIC REPRESENTATION OF THE ABC PROCESS



B. The Component Costing Process

As shown by figure 1 above, the cost of a single component of type, K_a, is a function of its material costs, its consumption of resources and its production volume.

Given $K_a \in K$
$c_a \in c$

$$c_a = f(M, R, n) \tag{1}$$

Where
M is the vector of material costs.
R is the vector of resource costs.
n is the vector of component production volumes.
c_a is the cost of component K_a

Determining the quantity and type of materials is normally easy because they are directly applied to a product. However, the product's consumption of indirect resources is more difficult to determine. Let us attempt to portray the process.

For our purposes, **resources**[14] are needed to enable the factory to: process materials into product components; assemble components into products; market and deliver the products; administer all company activities. Thus **R** is a vector of resources both within and outside the factory and R_k is the kth resource delivered by the facility.

What, by the way, is the relationship between the 'resource' and the traditional organisational unit, the 'department'? It may be one-to-one or one-to-many depending upon the technical, social, administrative and responsibility-accounting decisions which have led to given departments delivering particular resources. A department or resource can also be an activity centre. However, for present purposes, departments shall simply be ignored and seen through to the resources and through them to the activities they deliver.

14. Resources are frequently treated as cost centres by the accounting system. However, it is unfortunate that cost centres are normally set up in relation to organizational structure for performance evaluation purposes, rather than with a view to modelling resource flows within the firm.

Aggregating the costs of individual resources we have the total resource (PR) of the company:

$$\text{Given} \quad R_a \in R$$
$$PR = \sum_{a=1}^{k} R_a$$

Resources in turn are channelled through *activities* (such as the aforementioned *'prepare working drawings'*). In anything other than the short run, (in a rational firm) the monetary size, R_a, of each of these resources will be determined by the demands made by components for activities. Activities must be identified - the metric for the volume of activities are *cost drivers* (transactions).

Once the activities are identified, a cost pool relating to each activity is calculated. Each cost pool is the financial cost to the firm of performing an activity. All of the firm's resources are traced to the cost pools which in some cases comprise a mixture of the various resources. Therefore, cost pools must be homogeneous.

> *A cost pool is homogeneous if each activity whose costs are included therein has the same or a similar cause-and-effect relationship to a cost objective as the other activities that are included in the cost pool.*[15]

Resource costs are traced to cost pools using first stage cost drivers. "Number of staff" can be used as a first stage cost driver by determining the number of staff working on a particular activity. However, other cost drivers can be used as the means of tracing resource costs to cost pools. For example, if a forensic laboratory (a quite different resource) were to employ (a) an automated forensic DNA-analyser and (b) a neural-network fingerprint matcher then it might be found that cost-driving transactions were the 'number of gel electrophoresis steps required' and the 'number of fingerprints to be matched'.

15. Horngren and Foster 1987, p. 446.

Then we would have said "... then the costs of that single forensic laboratory could be divided into two homogeneous cost pools, DNA-typing and fingerprint-matching" according to the transaction type *electrophoresis steps required* for the former and *fingerprints to be compared* for the latter." Here the division into pools has occurred because the activities are clearly identifiable and separable. However where this separability is not so clear, identification of activities can be determined with a reasonable level of accuracy by examination of the tasks carried out by resource area staff. This follows from the assumption that activities are related to staff.[16]

Definition 1:

Given: $F_a \in F$
$L_b \in L$
$R_a \in R$

Let q_{ab} be the quantity of first stage cost drivers relating to R_a generated by cost pool b

$$L_b = \sum_{a=1}^{k} q_{ba} \frac{R_a}{F_a}$$

Where:

$$\sum_{b=1}^{p} q_{ba} = F_a$$

As there are p cost pools in the vector L:

$$PR = \sum_{b=1}^{p} L_b$$

While first stage cost drivers are used to determine the cost pools' monetary magnitude, and as such define the cost pools, this is not the only way in which cost pools are defined. They are also defined by the second stage cost drivers. In fact, through the *products demand activities, activities demand resources* linkage, it is actually the second stage cost drivers or transactions which drives the size of cost

16. As a gloss upon this, (as figure 1 illustrates) these homogeneous cost pools might be consolidated into a lesser number of homogeneous cost pools (even consolidating those from different resources) if there is a strong correlation between their cost drivers. This consolidation could even be undertaken for pools with different drivers (such as, say, 'number of working drawings' and 'hours spent on constructing software simulations') provided that there was a strong correlation between the drivers. It would not matter which of the original pools' cost drivers was to be used for the consolidated pool.

pools. However, the cost per transaction is seldom, if ever, known in advance, so the monetary valuation of a cost pool cannot be calculated by simply multiplying total transactions by cost per transaction. Nevertheless, this definition by second stage cost drivers should not be ignored.

Notice that the *activities* and the *homogeneous cost pools* are being co-determined. The activities finally selected for costing as individual cost pools are exactly those activities which, when chosen as independent variables (measured by the count of their transactions), *partition* the total cost of resources into homogeneous cost pools <u>and</u> most effectively *explain* the total variance in the level of the cost pools. The process is akin to cluster analysis.

While there may be more than one transaction relating to an activity, there will be only one which is significant in its influence. If there were two or more with significant influence, then consideration should be given to breaking the pool into smaller cost pools, each relating to one of the transactions. Not to do so will introduce a level of distortion, and a decision must be made as to whether that distortion is acceptable.

It follows that if the transaction which 'drives' the size of a homogeneous cost pool can be identified (and measured with T_b) the cost per transaction can be determined.

Definition 2:

Let $\Theta_1, \Theta_2, \ldots, \Theta_p$ be the cost per transaction for cost pools $L_1, L_2, \ldots, L_p$.

Given That: $L_b \in L$

$$\Theta_b = \frac{L_b}{T_b}$$

The resource consumption of type K_a components, depends on the number of transactions, Ω_{ba}, required from a specific homogeneous cost pool, L_b, for their production. However, Ω_{ba} can be equal to zero where a component type does not require this resource. Therefore, the amount of homogeneous cost pool, L_b, consumed by components of type, K_a, can be calculated as follows:

Definition 3:

Given That: $K_a \in K \quad a = 1 \,..\, j$
$L_b \in L \quad b = 1 \,..\, p$
Ω_{ba} is the number of transactions, type K_a components generate in cost pool L_b
Φ_{ba} is the share K_a has of cost pool L_b

$$\Phi_{ba} = \Omega_{ba}\Theta_b \quad \text{where} \quad \sum_{a=1}^{j} \Phi_{ba} = L_b$$
$$\text{and:} \quad \Omega_{ba} \geq 0$$

Each type K_a component will use τ_{da} units of material (i.e. volume-related resource) type M_d. From (1) the total cost c_a of a single component of type, K_a, is the sum of its material costs and its other resource costs.

Given: $M_d \in M \quad d = 1 \,..\, t$
τ_{da} is the quantity of material type M_d used by component type, K_a
n_{Ka} is the quantity produced of component type, K_a
c_a is the cost of a single component of type, K_a

$$c_a = \frac{\sum_{d=1}^{t} \tau_{da}M_d + \sum_{b=1}^{p} \Omega_{ba}\Theta_b}{n_{Ka}} \tag{2}$$

Where:
both τ_{da} and Ω_{ba} may be equal to zero.

C. The Costing of Products

Each product has a component vector although it may have some components in common with other products. Each product, X_e, in the vector **X**, consists of a combination of up to j individual types of components. Each component is used in different quantities. So there is a quantity α_{ea} of each type of component in the product X_e.

The cost, C_e, of product, X_e is determined by multiplying the cost of each component type by the quantity used and summing this for all component types used by the product.

Definition 4:

Given $X_e \in X \quad e = 1 .. i$

$K_a \in K \quad a = 1 .. j$

$c_a \in c \quad a = 1 .. j$

α_{ea} is the quantity of components of type, K_a required for one unit of product X_e.
C_e is the unit cost of product X_e
c_a is the cost of a single unit of component type K_a

$$C_e = \sum_{a=1}^{j} \alpha_{ea} c_a \qquad \text{for } \alpha_{ea} \geq 0 \tag{3}$$

From (2) the total cost of a product, X_e, based on its component costs can be expanded as follows:

Postulate 1:

$$C_e = \sum_{a=1}^{j} \alpha_{ea} \left[\frac{\sum_{d=1}^{t} \tau_{da} M_d + \sum_{b=1}^{p} \Omega_{ba} \Theta_b}{n_{K_a}} \right] \tag{4}$$

Where there are:
- j components types.
- t material types.
- p homogeneous cost pools.

Assembly costs or other activity costs relating directly to a product rather than to its components are treated as a special component. These costs accumulate to the product in the same way as the costs of any other component.

D. Product Profitability

Profit margin in ABC means the contribution which a product makes towards the long-run profits of an entity. The profit margin of product X_g is its market price less its cost:

Definition 5:

$$PM_g = P_g - C_g \tag{5}$$

We have assumed that product X_g has a market price P_g which cannot be changed by the company. Therefore, as profit maximisation is assumed to be the goal of managers, it is in the best interests of the company to sell only those products which do not have a negative profit margin i.e. those products with $\mathbf{PM_i \geq 0}$.

IV. The Product Mix Decision

The firm must now decide which product mix will maximise its profits. Within its production capabilities, the firm will produce any product X_g which has $\mathbf{PM_i \geq 0}$ plus others with a negative profit margin under certain circumstances. There are two possible marketing states in which the product mix decision may include products with a negative profit margin.

1. There may be some products which are complementary to each other.
2. It may be in the long term interests of the company to sell a product which has a negative profit margin for "strategic" (i.e. non-cost) reasons such as establishing market share.

A. No Complementary Products

The profit maximisation assumption (general assumption number 1 above) requires that the products with a positive profit margin per period should be put into production. Conversely, those with a negative profit margin should be discontinued. The product mix selected from **i** types of products, that maximises the profits of the firm is:

Postulate 2:

Given: N_g is the quantity of product X_g which will be produced in the period.
$X_g \in X \qquad g = 1 \ldots i$

$$\text{Max} \qquad \sum_{g=1}^{i} (PM_g)\, N_g \qquad \text{for } N_g = 0 \text{ when } PM_g < 0$$

B. Complementary Products

If there are complementary products, it may be necessary to produce negative profit margin products. This means that in order to sell product X_e in sufficient quantities to maximise its profit margin, it is necessary for the firm to offer product X_f at the same time. This situation arises because buyers tend to buy both or neither. For example, people generally buy turpentine whenever they buy enamel paint, or want to buy a complete gasket set and may be unwilling to buy only one gasket. Product X_f may or may not have a negative profit margin.

Given the following definitions:

- e = the set of products with complementary products.
- f = the set of products complementary to set e products.
- g = the set of non-complementary products.
- n_e = number of products from set e demanded if sold alone .
- n_e^f = number of different products from set e demanded if sold with products from set f.
- n_f = number of different products from set f which it is necessary to sell in order to sell one product from set e. This ratio of e to f products is fixed within the period.
- n_g = number of different products from set g.
- $n_e + n_f + n_g = i$ where i is the total number of different product types produced.

Postulate 3:

$$\text{Max} \sum_{g=1}^{n_g} (P_g - C_g) N_g + \underset{\{e,\ f\}}{\text{Argmax}} \left[\begin{array}{l} \displaystyle\sum_{e=1}^{n_e} (P_e - C_e) N_e \\ \displaystyle\sum_{e=1}^{n_e^f} \left[(P_e - C_e) + \sum_{f=1}^{n_f} (P_f - C_f) N_f \right] N_e^f \end{array} \right] \tag{6}$$

Where:
N_g = The production quantity for a non complementary product.

N_e = The production quantity for a product from set e if sold alone.

N_e^f = The production quantity for a product from set e sold with its complementary class f products type.

N_f = The production level of each product from set f required to be able to sell N_e^f of each product from set e.

$N_e, N_f, N_g, N_e^f \geq 0$

The production quantity of each type is determined by the machinery, skills and technological capabilities of the company.

C. Strategic Reasons

When there are sound strategic reasons, a company may sell a product with a negative profit margin. It may be necessary to do so in order to establish a market, to gain market share or for political reasons.

In all cases where negative profit margin products are sold there must be an expected future gain which offsets the short term loss. In the short term, the firm will make a loss but will endeavour to minimise that loss. If there is an expected future gain, present value G_e, in a market for product, X_e (which has $PM_e < 0$) then the gain must at least recover the initial loss. For all products in this situation, the profit maximising product mix is that which minimises the total loss by selling the minimum of each product necessary in order to obtain the expected future gain.

$$\sum_{e=1}^{i} G_e \geq - \left[\min \sum_{e=1}^{i} (PM_e) N_e \right]$$

Where
G_e = Expected future gain from the strategic decision

N_e = Production quantity for Product X_e and is the minimum required to achieve the firm's strategic objective.

V. Postulate 4

The product mix which will maximise the profits of a firm is the sum of: all non-complementary products with a positive profit margin at budgeted production levels; all complementary products, provided that the profit margin, at budgeted production levels, of a group of complementary products is greater than the profit margin of each when sold separately; and all negative profit margin products sold to achieve any specific strategic objective of the company where there is a long-term gain which will exceed the total short term losses.

SECTION 3

VI. A Numerical Example

The following numerical example is derived from the model expounded in the paper. The overall details are as follows:

* Three functional departments which correspond to resource areas. (For the sake of convenience, these areas will be referred to as departments).
* Twelve cost pools are derived from these resource areas.
* Nine different types of components are produced.
* Four products are produced from various proportions of the nine different components.
* Number of staff is the first stage cost driver.

The products are costed using ABC and then two product mix scenarios are considered:

1. Demand for each product is independent.

2. Demand for product X_2 and product X_3 is complementary.

Figure 2
RESOURCE CENTRES

DEPARTMENT DATA				
DEPT	(R_k) TOTAL COST		STAFF	Per Staff
Department 1	100,000	(R_1)	8	12,500
Department 2	150,000	(R_2)	12	12,500
Department 3	200,000	(R_3)	16	12,500
TOTALS	450,000		36	

Figure 3
COST POOLS

ANALYSIS DEPT 1

POOL	(S_{11} - S_{13}) STAFF PER ACTIVITY	(L_1 - L_3) POOL SIZE	(T_1 - T_3) NUMBER OF TRANSACTIONS	(θ_1 - θ_3) COST PER TRANSACTION
L1	4	50,000	50,000	1.00
L2	3	37,500	2,000	18.75
L3	1	12,500	500	25.00
	8	100,000		

ANALYSIS DEPT 2

POOL	(S_{21} - S_{24}) STAFF PER ACTIVITY	(L_4 - L_7) POOL SIZE	(T_4 - T_7) NUMBER OF TRANSACTIONS	(θ_4 - θ_7) COST PER TRANSACTION
L4	4	50,000	12,500	4.00
L5	3	37,500	6,000	6.25
L6	1	12,500	1,500	8.33
L7	4	50,000	5,500	9.09
	12	150,000		

ANALYSIS DEPT 3

POOL	(S_{31} - S_{35}) STAFF PER ACTIVITY	(L_8 - L_{12}) POOL SIZE	(T_8 - T_{12}) NUMBER OF TRANSACTIONS	(θ_8 - θ_{12}) COST PER TRANSACTION
L8	8	100,000	16,500	6.06
L9	2	25,000	2,000	12.50
L10	1	12,500	125	100.00
L11	2	25,000	100,000	0.25
L12	3	37,500	250	150.00
	16	200,000		

HOMOGENEOUS COST POOLS (Cost Per Transaction)

L_p	L_1	L_2	L_3	L_4	L_5	L_6	L_7	L_8	L_9	L_{10}	L_{11}	L_{12}
	1.00	18.75	25.00	4.00	6.25	8.33	9.09	6.06	12.50	100.00	0.25	150.00

MATERIAL COST PER UNIT

Material	M_1	M_2	M_3	M_4	M_5	M_6
	25.50	12.75	84.00	32.50	28.75	16.00

Figure 4A
COMPONENT COST DATA PART A

	COMPONENT K_1		COMPONENT K_2		COMPONENT K_3		COMPONENT K_4		COMPONENT K_5	
	Ω_1 TRX	$\Omega_1 p\Theta_p$ COST	Ω_2 TRX	$\Omega_2 p\Theta_p$ COST	Ω_3 TRX	$\Omega_3 p\Theta_p$ COST	Ω_4 TRX	$\Omega_4 p\Theta_p$ COST	Ω_5 TRX	$\Omega_5 p\Theta_p$ COST
L_1	11,494	11,494.00	1,724	1,724.00	2,874	2,874.00	10,345	10,345.00		
L_2	155	2,906.25	410	7,687.50			256	4,800.00		
L_3			167	4,175.00						
L_4					2,344	9,376.00			3,906	15,624.00
L_5	2,710	16,937.50	1,355	8,468.75			1,161	7,256.25	484	3,025.00
L_6			536	4,464.88			643	5,356.19	214	1,782.62
L_7			3,300	29,997.00			1,100	9,999.00		
L_8	6,428	38,953.68								
L_9	112	1,400.00			444	5,550.00				
L_{10}	11	1,100.00	10	1,000.00	21	2,100.00				
L_{11}	21,430	5,357.50			8,930	2,232.50	5,357	1,339.25		
L_{12}	250	37,500.00								
ACT COST		115,648.93		57,517.13		22,132.50		39,095.69		20,431.62
	τ_1 TRX	$\tau_1 t M_t$ COST	τ_2 TRX	$\tau_2 t M_t$ COST	τ_3 TRX	$\tau_3 t M_t$ COST	τ_4 TRX	$\tau_4 t M_t$ COST	τ_5 TRX	$\tau_5 t M_t$ COST
M_1	268	6,834.00	125	3,187.50						
M_2	804	10,251.00			201	2,562.75			1,160	14,790.00
M_3					201	16,884.00			928	77,952.00
M_4	134	4,355.00					636	20,670.00	696	22,620.00
M_5	402	11,557.50	375	10,781.25	335	9,631.25	477	13,713.75		
M_6			500	8,000.00			318	5,088.00		
TOT MAT		32,997.50		21,968.75		29,078.00		39,471.75		115,362.00
TOTAL COST		148,646.43		79,485.88		51,210.50		78,567.44		135,793.62
TOT. PRODN n_{Kj}		134		125		67		159		232
COST/UNIT TOT	c_1	1,109.30	c_2	635.89	c_3	764.34	c_4	494.13	c_5	585.32

Figure 4B
COMPONENT COST DATA PART B

	COMPONENT K_6		COMPONENT K_7		COMPONENT K_8		COMPONENT K_9	
	Ω_6 TRX	$\Omega_6 p\Theta_p$ COST	Ω_7 TRX	$\Omega_7 p\Theta_p$ COST	Ω_8 TRX	$\Omega_8 p\Theta_p$ COST	Ω_9 TRX	$\Omega_9 p\Theta_p$ COST
L_1			9,195	9,195.00	5,747	5,747.00	8,621	8,621.00
L_2	103	1,931.25	461	8,643.75	615	11,531.25		
L_3	250	6,250.00	83	2,075.00				
L_4					6,250	25,000.00		
L_5					290	1,812.50		
L_6					107	891.31		
L_7			1,100	9,999.00				
L_8	4,286	25,973.16	2,572	15,586.32			3,214	19,476.84
L_9	278	3,475.00	222	2,775.00			944	11,800.00
L_{10}			83	8,300.00				
L_{11}	53,570	13,392.50					10,713	2,678.25
L_{12}								
ABC. COST		51,021.91		56,574.07	RES	44,982.06		42,576.09
	τ_6 TRX	$\tau_6 t M_t$ COST	τ_7 TRX	$\tau_7 t M_t$ COST	τ_8 TRX	$\tau_8 t M_t$ COST	τ_9 TRX	$\tau_9 t M_t$ COST
M_1								
M_2	168	2,142.00	50	637.50			399	5,087.25
M_3					552	46,368.00		
M_4					552	17,940.00		
M_5					552	15,870.00		
M_6	1,344	21,504.00	300	4,800.00			1,064	17,024.00
MAT. COST		23,646.00		5,437.50	MAT	80,178.00		22,111.25
TOTAL COST		74,667.91		62,011.57		125,160.06		64,687.34
TOT. PRODN n_{Kj}		168		50		138		133
COST/UNIT TOTAL	c_6	444.45	c_7	1,240.23	c_8	906.96	c_9	486.37

Figure 5
PRODUCT COSTS

PRODUCT COSTS

COMPONENT	PRODUCT X1 No	PRODUCT X1 COST	PRODUCT X2 No	PRODUCT X2 COST	PRODUCT X3 No	PRODUCT X3 COST	PRODUCT X4 No	PRODUCT X4 COST
K1	3	3,327.90	5	5,546.50			1	1,109.30
K2			3	1,907.67	2	1,271.78	3	1,907.67
K3					6	4,586.04		
K4	1	494.13					5	2,470.65
K5	1	585.32	2	1,170.64			5	2,926.60
K6	5	2,222.25	2	888.90	4	1,777.80		
K7					5	6,201.15	2	2,480.46
K8			10	9,069.60				
K9					6	2,918.22		
		6,629.60		18,583.31		16,754.99		10,894.68
		=========		=========		=========		=========

Figure 6
PRODUCT PROFITABILITY - NO COMPLEMENTARY PRODUCTS

	PRODUCT X1	PRODUCT X2	PRODUCT X3	PRODUCT X4
Product Cost	6,629.60	18,583.31	16,754.99	10,894.68
Market Selling Price	8,575.00	12,432.00	42,975.00	12,875.00
Profit margin	1,945.40	(6,151.31)	26,220.01	1,980.32
Market Demand	275	200 *	125	1,200
Total Profit margin	534,985.00	(1,230,262.00)	3,277,501.25	2,376,384.00
Maximised Product Mix	534,985.00		3,277,501	2,376,384
Total Company Contribution	=	6,188,870		

* The estimate is that if the product were offered the market would demand 200 units.

Product profitability is a function of the profit margin of each product type. If a product has a negative profit margin it would be dropped from the product mix. In this example, product X_2 would be discontinued. This will give a total contribution of $6,162,550 which would reduce to $4,934,550 if production of X_2 were continued.

Figure 7
PRODUCT PROFITABILITY - COMPLEMENTARY PRODUCTS

	PRODUCT X1	PRODUCT X2	PRODUCT X3	PRODUCT X4
Product Cost	6,629.60	18,583.31	16,754.99	10,894.68
Market Selling Price	8,575.00	12,432.00	42,975.00	12,875.00
Profit margin	1,945.40	(6,151.31)	26,220.01	1,980.32
Market Demand	275	100 *	225 *	1,200
Total Profit margin	534,985.00	(615,131.00)	5,899,502.25	2,376,384.00
Maximised Product Mix	534,985.00	(615,131.00)	5,899,502.25	2,376,384.00
Total Company Contribution	=	8,195,740.25		

Compare this result with figure 6

* Surveys discover that people will frequently buy product X3 only if product X2 is offered with it. These sales are in addition to the sales of product X3 on its own.

Compare this with Figure 6. Products X2 and X3 are complementary i.e. more of product X3 can be sold if product X2 is sold with it. In this case, the market demand for X3 rises from 125 to 225 if a single X2 is sold with each X3. This increases the total profit margin from $6,188,870 to $8,195,740.

SECTION 4

VII. Conclusions

Activity-based costing aims to improve the relevance and accuracy of product costs by more accurate determination of resource consumption by products. It achieves this by relating product costs to the economic forces which drive them. By using ABC, it has been possible to develop a model which will allow sound product mix decisions by managers. Managers using ABC are able to determine those products which will be of most benefit to their firm and those which will be a drain on the firm's resources. As discussed in Chapters 2 and 3, this valuable information is hidden by traditional volume based product costing systems which tend to distort product costs. Volume based systems use inappropriate cost drivers for allocation of indirect costs.

With modern information processing technology, the statistical information necessary for ABC can be readily gathered and analysed to determine the all important underlying transactions which drive the size of resources. Once they are distinguished, a manager is able to determine the cost per transaction. Identifying the number of transactions of a product's components plus its material requirements enables a manager to find the correct cost of the product in terms of its resource consumption. Armed with this information, the manager is able to make optimal product mix decisions to maximise the profitability of his or her firm.

CHAPTER 5

HOW IS ABC DIFFERENT FROM OTHER ABSORPTION COSTING MODELS?

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CHAPTER 5

HOW IS ABC DIFFERENT FROM OTHER ABSORPTION COSTING MODELS?

I. Introduction

Activity based costing (ABC) is an evolution of the traditional absorption product costing model.[1] However, its increased complexity and the different uses to which it has been put changed the structure of the traditional model quite noticeably. It is necessary to compare the ABC model to its parent absorption costing model in order to highlight similarities and differences.

This chapter will present the characteristics of each costing model so that the parentage of ABC is apparent. Many of the characteristics of ABC derive from the philosophy underlying the model rather than the physical factors of its component parts.

II. Characteristics of the Traditional Absorption Costing Model

The characteristics of the traditional absorption product costing model result from its emphasis on income determination - its major task. Expenses must be split between those to be matched to the revenues of the period and those which must be inventoried until a future period. The absorption model is used for the second task by valuing inventories for external financial reporting. Factors such as reliability, conservatism and neutrality are strong influences on the way product costs are calculated. This means that product costs are determined as much by the requirement to be acceptable to auditors as for their actual utility. If that was where the use of product costs ended, there would be no problem. However, managers, in need of product cost information for other purposes, have to use these product

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1. Cooper R., "ABC: A Need, Not an Option", Accountancy, Sept 1990, p. 86.

costs, with their built-in errors, because most companies have only one product costing system.

There are six key characteristics of a traditional absorption costing model:

1. Product costs are calculated as the sum of direct labour costs, direct material costs plus an allocation of factory overhead.

2. Only factory overhead is absorbed into product costs. All other costs such as selling and administration costs are expensed as period costs. This is a result of the external reporting requirement that it is more important to match period costs against period revenues than to ensure that individual product costs reflect resource consumption.

3. Indirect costs are traced in a two stage process, firstly, to departments then secondly, to products. This has the consequence that cost control measures tend to be aimed at reducing departmental costs eg a 10% across-the-board cut in spending instead of reducing activity levels to reduce resource consumption.

4. The resulting product costs are for use in valuing inventory for external financial reporting.

5. Production volume bases such as direct labour hours or cost, material costs or, less often, machine hours, are used to trace overheads to products. The allocation basis need not necessarily have a cause and effect relationship with costs and can therefore be arbitrarily chosen.

6. Frequently plant-wide allocation rates are used, normally in the interests of simplicity for valuing inventory for external financial reporting. These rates can be calculated to several decimal places leading to spurious accuracy in product costs.

III. Characteristics of An Activity Based Costing System

Activity based costing is an evolution of the basic absorption costing model rather than a revolutionary new model.[2] However, as a result of the areas on which it concentrates, it can be revolutionary in its effects.[3] It is expressly designed as a decision-making tool, reducing the need to conform to generally accepted accounting principles as they apply to external financial reporting.

Most of its characteristics stem from its underlying role as a long-term decision making model, rather than its physical characteristics. Its major characteristics are as follows:

1. ABC is a multi-stage costing process in which costs are first traced to cost pools associated with particular activities using first stage cost drivers. The activities relating to specific cost pools demand resources from across departmental boundaries. In the second stage, costs are traced from the cost pools to products using second stage cost drivers.

2. The cost drivers used are factors which have a strong cause and effect relationship between either the activity and the costs associated with the activity or the product and the activity.

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2. Bromwich M. and A. Bhimani, Management Accounting: Evolution not Revolution, CIMA, 1989.
3. Dugdale D., "The Uses of Activity-Based Costing", Management Accounting, Oct 1990, p. 37.

3. ABC does not distinguish between short run, volume related direct cost drivers such as labour hours, and long run, non-volume related cost drivers such as transactions. Instead, it uses the most appropriate cost driver to trace costs from a cost pool, relating to some activity, to a cost objective.

   So *"ABC systems use direct cost information in the same way as traditional systems, which are detailed engineered bills of material and labour. Where ABC systems differ is that they create a bill of activities for overhead."*[4]

   By this means, "Activity-based costing provides a relatively accurate product cost because it captures many dynamic variables."[5]

4. All costs are included in a product's cost. ABC provides an ability to follow a product's value chain from development, through manufacture, to the sales and distribution functions that place it in a customers hands.

5. ABC differs from traditional costing models on the basis of the purpose for which the cost information is to be used, in that it concentrates on resource consumption questions. Cooper believes that traditional product costing systems focus on spending on resources whereas ABC focuses on the consumption of resources (having been already purchased) by products.[6] Cooper says that

   "... ABC is a model of resource consumption, not a model of spending. What is the difference between these two types of models? A resource consumption model looks at the demand for activities, while a spending model looks at the capacity provided to perform those activities."[7]

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4. Sharman P., "A Practical Look at Activity-Based Costing", CMA Magazine, Feb 1990, p. 8.
5. ibid, p. 11.
6. Cooper 1990, p. 58.
7. ibid.

The ABC model shows what spending ought to be by assessing what resources will be consumed for a given activity level. If spending is greater than that amount then excess capacity will exist and the manager will be able to assess what action to take to correct this problem. In fact, "[t]he ABC perspective argues that it is theoretically possible to approximate the cost of the resources consumed in the production of a given product".[8]

6. ABC shows what costs ought to be incurred for a given product mix. If negative margin products are kept in production for strategic reasons (such as full-line strategy, strategic blocking or market penetration strategies) then ABC can help estimate the cost of these strategies.

7. ABC uses a long term perspective which allows all costs to be considered variable. All resources cost cash and ABC gives insight into what the impact will be on spending on resources in the long term.

8. ABC is an attention-focusing management accounting tool. By focusing on the cost of activities, managers are able to decide whether activities are necessary or whether they can be handled in a more efficient manner. It is in this attention-focusing role that ABC differs from traditional systems. This is even more effective when activities are related to customers as well as products, as companies can identify which customers require the most activity. If this is related to the revenue generated by each customer, a customer profitability profile can be determined, thus enabling managers to focus on the most profitable customers and see if their other customers can be serviced more efficiently.

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8. ibid, p. 59.

9. The goal of ABC is to provide insights for managers into the effects of decisions such as whether to drop products from the product line. The decision to drop one product is interdependent with the decisions to drop others. A decision to drop a number of lines will alter the resource consumption patterns in the company, and ABC accurately reflects this alteration by showing what the resource consumption ought to be. From this information, the lag in the actual process of reducing resources will be apparent. Even when the decision is to drop only one product, the decrease in the demand for resources would be apparent even if spending on the resource does not reduce. This will show as over-capacity. ABC enables managing costs for cost leadership and cost effectiveness.

10. ABC endeavours to remove the arbitrary allocations which are characteristic of a conventional absorption costing model. In fact, the term "tracing" is often used to avoid using the term "allocation" which has come to have connotations of arbitrariness associated with it. By insisting that there be a cause and effect relationship between the cost driver and the cost pool being traced, arbitrary allocations are largely avoided. ABC is better than any of the more traditional models firstly, because it has a finer level of cost tracing through the use of multiple cost pools and multiple drivers, and secondly, because it requires a cause and effect relationship before a cost driver can be used.

ABC is an attempt to move along a continuum from arbitrary cost allocations towards total direct costing.

Figure 1

ALLOCATION - DIRECT COST CONTINUUM

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                  Activity Based Costing
                    --------------->>
Arbitrary                                        Direct
Allocations                                       Costs
```

11. Ultimate accuracy is unnecessary with ABC. As long as the product cost is approximately right, it considered to be useful for decision making.

12. ABC has a <u>decision-making orientation</u>. It is not designed for inventory valuation for external reporting which is still governed by the matching principle. "... activity based accounting ignores fixed/variable issues ... and concentrates on relevant/incurred as opposed to apportioned or assumed ..."[9] As a result, ABC is able to support decision making by identifying the resource consumption implications and relationships resulting from different product decisions.

13. ABC can replace existing product costing systems for all roles or can be implemented as a decision support tool in addition to the existing system.[10]

14. ABC is not limited to the organisational structure of the company. Costs are accumulated by activities which may cross departmental boundaries where particular production resources are shared.

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9. John Chaplin, Finance Controller at Jaguar Cars, speaking at a conference organised by the Institute of International Research in London, October 1989 quoted in Luck V., "Cost Management in the 1990s", <u>Management Accounting</u>, Dec 1989.
10. Kaplan R.S., "One Cost System Isn't Enough", <u>Harvard Business Review</u>, Jan-Feb 1988.

15. By crossing departmental boundaries, the model supports goals of the entire company. Traditional costing systems, by tracing costs to single departments, can enhance departmental profitability while reducing the overall profits of the organisation.

16. By using budgeted costs, ABC can be made to be forward looking. Dugdale sees a link between ABC and Zero-based Budgeting in this respect.[11] This link is most apparent for a ground up ABC implementation, thus extending the use of ABC from a strategic decision making tool to a budgeting tool. If the costs of activities are known, then budgets can be built up, not only around projected products, but around projected activity levels as well.

IV. The Most Appropriate Environment for Activity-Based Costing

Based on the case studies on ABC, the environment where ABC seems to be most appropriate is where:[12,13]

1. There are many diverse products.
2. Volume is not the only influence on costs.
3. Decisions are not independent.
4. Processes are many and diverse.
5. Indirect or fixed cost structure is very high.
6. Overhead costs are rising as a percentage of total costs.

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11. Dugdale D., "The Uses of Activity-Based Costing", Management Accounting, October 1990, p. 37.
12. Jeans and Morrow 1989a and 1989b.
13. Cooper R., "Cost Classifications in Unit-Based and Activity-Based Management Cost Systems", Journal of Cost Management for the Manufacturing Industry, Fall 1990.

ABC is better able to manage these factors because of its ability to capture complexity and diversity in the organisation by using multiple, volume and non-volume related cost drivers to trace costs to products.

Environments where there are high levels of competition, a wide range of diverse products and many diverse production processes provide incentives for firms to adopt more accurate product costing systems. It also suits companies with a wide customer base, each with differing demands, because it can provide the level of detail required to manage the varying requirements of each customer.

ABC is most appropriate in firms which have a high degree of automation because automated factories demand such a high level of support from expert staff such as engineers and computer programmers. However, this factor, based on the results of the case study in this thesis, is not as important as the level of diversity and complexity in the product mix.

V. Conclusion

The ABC model is an evolution of the traditional absorption costing model. Its fundamentally different underlying philosophy and purpose, however, causes its effects to be revolutionary. It moves away from the external reporting requirements of the traditional model and concentrates on assisting the decision-making of managers.

By requiring a cause and effect relationship between the factors used for tracing costs to products, the ABC product cost better reflects the long-term resource consumption of products. As activities are costed, managers are able to make decisions to maximise the benefits to the firm from those activities. This is the greatest strength of the ABC model.

CHAPTER 6

THE USE OF CASE STUDIES AS A RESEARCH TOOL

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CHAPTER 6

THE USE OF CASE STUDIES AS A RESEARCH TOOL

I. Introduction

The case study is frequently viewed as a weak research tool.[1] It appears to lack rigour because it focuses on only one situation therefore results cannot be statistically tested. Case boundaries are difficult to define and data collection methods are hard to determine. Once the data is collected, it is difficult to decide what must be done with it.

Despite these criticisms, the case study is widely used, especially in the social sciences, although there are fewer research case studies in management accounting. Those cases which exist tend to be teaching cases rather than research cases.[2] Therefore, it is necessary to look to the social sciences for some guidance on the case study research method. Robert Yin's book, "Reviewing Case Study Research, Design and Methods" [Sage, 1984, 1989] is widely referred to by researchers interested in this technique.[3]

This chapter will examine some of the issues generated by the case study research method.

II. Selecting a Research Strategy

Every research strategy is pluralistic ie it can be used to explore, describe or explain; although some are better at answering particular questions than others. Selecting the appropriate strategy hinges on the question being asked. "How" and "why" questions are more appropriate for case studies, rather than "who", "what" and "where" questions for which surveys may be more useful. Case studies are most

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1. Yin 1989, p. 10., Kaplan 1986, p. 447.
2. The many Harvard cases on product costing and strategic management accounting are a good illustration of this point.
3. Bruns 1989, Spicer 1990, Hakim 1987.

effective when examining contemporary events where the behaviour of the phenomenon cannot be manipulated.[4]

III. Definition

Yin defines a case study as an empirical inquiry which:[5]

- Investigates a contemporary phenomenon within its real-life context; when
- the boundaries between phenomenon and context are not clearly evident; and in which
- multiple sources of evidence are used.

Case studies can include both single cases and multiple cases. In a single case, an indepth study is made of a single data point such as a single company. In a multiple case, several data points are investigated. These may be either several companies or several embedded units such as profit centres within one company. Case studies can also extend over long time periods in order to study changes in phenomena over time.

It is not necessary for case studies to contain only qualitative information. They can include or even be limited to quantitative evidence. My study of product costing within Fisher and Paykel's Refrigeration Division is substantially quantitative although some qualitative judgements will be made about the validity of the Activity-based costing model.

4. Yin 1989, p. 20.
5. Yin 1989, p. 23.

A. The Purpose of Case Studies

The purpose of a case study is to describe real life phenomena and to evaluate and explain complex causal links within these phenomena. Case studies can illustrate theoretical propositions about particular phenomena by studying the phenomena where they occur. Where no clear outcome emerges from a study, the phenomena can be explored to try to gain insights. To achieve these purposes, case studies require detailed, intensive investigations into firms. This takes time, effort and extensive research design.

By taking a holistic approach, the case study is able to capture the richness of organisations as a system. "The standard justification for adopting a holistic standpoint is that human and social systems have a characteristic wholeness which pervades the individual system elements.[6] Thus, the viewpoints of individuals and groups, as well as the organization itself, can be accounted for as a set of multiple realities, rather than as a set of laws such as may be found in a physical science.

A distinguishing feature of case studies is the lack of clearly defined variables. This gives great freedom to explore the phenomenon which is being studied, but the lack of standards, classifications and guide-lines can allow the researcher to go astray.

B. Types of Case Studies

Case studies fall into two general classes. Firstly, there are simple case studies which will normally only be descriptive. Secondly, there are complex case studies which can test hunches, hypotheses and ideas in varying combinations.[7]

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6. Tomkins, 1986, p. 454.
7. Hakim 1987, p. 61, Spicer 1990, p. 11.

Case studies can be exploratory, descriptive or selective. *Exploratory case studies* seek to explore a phenomenon to gain insights; particularly when little previous research exists. Cases may "... uncover unexpected puzzles which become the basis for further research".[8] From these insights, propositions can be deduced. These can be further explored or tested in other cases either to eventually produce testable hypotheses or to generalize to produce a theory or model.

Descriptive case studies simply describe or illustrate a phenomenon.

Selective case studies, on the other hand, can focus on particular issues where there is a lot of research evidence. The most rigorous studies can be used to test existing theories and "... explain the specific, rather than ... produce generalisations".[9] This test can be in the form of a *deviant case study* to test for an exception which disproves a rule or a *strategic case study* which looks for the most favourable instance.[10] From this analysis, existing propositions and theories may be re-evaluated.[11]

A particular type of strategic case study is the *best practice case study.* The purpose of these case studies is to "... illustrate, and thereby promote and encourage, organisational policies and practices that are seen as successful or exemplary".[12]

8. Spicer 1990, p. 23.
9. Scapens 1990, p. 265.
10. Hakim 1987, p. 62
11. Spicer 1990, p. 21.
12. Hakim, p. 71.

IV. Strengths and Weaknesses of the Case Study Research Method

A. Strengths

1. Observe Phenomena

Phenomena which may not be measurable by questions or document analysis can be observed and measured. Simon calls these "*the imponderabilia of actual life*".[13]

2. Explain Phenomena

Rosenblatt suggests that explanation is the goal of case studies. Therefore the standard of accuracy of the field work determines the usefulness of a study.[14] He believes that Campbell's "degrees of freedom" concept gives strength to the theoretical conclusions which can be drawn from a study through the use of triangulation, sufficient pieces of data and data from many sources .Rosenblatt believed that

> "... *blundering ahead with a theory that one suspects is naive is far more productive than waiting patiently but passively for a strong theory to come to one*".[15]

3. Flexibility

The use of either a single case or a set of cases leads to a great deal of flexibility in the research design. The more cases which can be investigated, the more rigorous the conclusions become and the greater the confidence which can be felt in generalisations made from the study. At this point, the case study is close to becoming a very detailed survey so statistical inference can be used to supplement analytical inference.[16]

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13. Simon 1978, p. 206.
14. Rosenblatt 1981, p. 196.
15. Rosenblatt 1981, p. 217.
16. Hakim 1987, p. 64

However, special care must be taken to ensure that an explanatory case study is rigorous; otherwise it becomes merely descriptive. This is caused by the flexibility a case study offers. If the aims are vague or the study is sloppily executed, then the conclusions cannot be strong.[17]

"The case study is the social research equivalent of the spotlight or the microscope; its value depends crucially on how well the study is focused."[18] The focus resulting from a well designed and thoughtfully implemented case study enables the richness of organisations to be captured so that theories can be developed about how organizations work and how they may be improved. "Overall, a trend may be toward appreciating the complexity of organizational phenomena, for which the case study may be the most appropriate research method."[19] It enables the retention of the rich characteristics of real life.

B. Weaknesses

1. Open to bias

The use of interviews for data gathering leaves the study open to selectivity and bias.[20] Both the interviewer and the interviewee may filter evidence through their own biases and prejudices. This can occur by distorting the data given or by selecting only data which either party considers to be important.

Bias has been recognised as a particular problem with case study management accounting research.

> *"A major problem of doing research has been that those who have advocated more case-study type of research often have taken into the field their own understanding of what management accounting is. The result is that they end*

17. Yin 1989, p. 21.
18. Hakim 1987, p. 61
19. Yin 1989, p. 12.
20. Professor Haim Falk quoted in Bruns and Kaplan 1987, p. 12.

up criticising the practitioners for misapplying techniques rather than actually learning from or about practice."[21]

As a solution, Lawrence advocates a phenomenological approach. This approach allows the interviewer to learn about subjects from the way in which they view objects. "What people say about the world tells us about them as well as the world".[22]

2. Loss of Objectivity

Participant case studies can be criticised on the grounds that the participant loses his objectivity by being absorbed into the study group. Non-participant case studies on the other hand can be criticised by the suggestion that they missed some crucial data.

3. Practical Difficulties

A case study has many practical difficulties causing weakness as a method. They can take a long time to complete and be correspondingly expensive to carry out, and if care is not taken the final report will be unreadable. It is possible that the conclusions of the case will get lost in the mass of detail resulting from the data collection phase. Composing good case reports is an art. Yin suggests that good case investigators enjoy composing the report, looking upon it as an opportunity rather than a chore.[23]

Bruns warns of three major problems in case study or other forms of field research. These are:[24]

1. Selection and access to good research sites.

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21. Lawrence 1990, p. 3.
22. Lawrence 1990, p. 8.
23. Yin 1989, p. 127.
24. Bruns 1989, p. 158.

2. Redesigning or reassessing the study when the evidence is not consistent with the original design.
3. Predicting the complexity of a study before fieldwork commences.

C. Traditional Prejudices or Flaws.

The case study has traditionally been criticised as a research method for five major reasons.

1. Sloppy execution can cause bias in the results. Much of this criticism may be because a case study is seen as a soft option in which rigour is less important.
2. As results are not subject to statistical analysis, it is presumed that there is little basis for generalization. However, although it is not possible to generalize for populations, it is possible to generalize to propositions or theory.
3. Case studies take too long and produce massive, unreadable documents.
4. A case study is seen as only an exploratory phase of some other strategy.
5. Case studies can only be descriptive.

Most of these criticisms relate to the view that only when the hypothetico-deductive method can be rigorously applied, is a study "scientific". Good case design and appropriate data collection techniques can overcome these criticisms.

D. Ethical Considerations

There are significant ethical issues when using case studies. Whyte suggests the following guide-lines:[25]

1. Integrate ethical considerations into the research planning process.

25. Whyte 1984, pp. 219-223.

2. Beware of giving obligations over publication as giving the sponsors the right to veto publication can minimise the usefulness of the study. This can have damaging effects especially if it leaves the researcher open to accusations of serving the organisation, not science.[26]
3. Balance rights and obligations ie academic freedom versus absolute confidentiality.
4. Take care when studying social conflicts. Taking a position with one side or the other may have political benefits for some group in the study. If this is done openly, it may still be advantageous.
5. Treat subjects in a way which makes them supportive of the study. It may be better to have active collaborators in the study who give feedback on draft copies rather than passive subjects. The more agreeable the subjects are to the study, the more likely that the study will capture the information it seeks.

E. Measurement in The Study of Social Sciences

The tendency is to assume that any science which is not structured in the form of testable hypotheses such as physics, is not really science at all. Traditional science quantifies but there is a strong need to classify and find out the qualities of phenomena. In social sciences measuring is problematic and tends to be qualitative. Whyte says that "To use measurement for scientific progress we need to ask:

1. what to measure (subjective states and/or overt behaviour)
2. within the context of what qualitative classificatory system we intend to measure, and
3. how to integrate quantitative and qualitative data."[27]

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26. Whyte [p. 196] gave an undertaking to Phillips Petroleum not to publish his book unless they agreed. They refused and this prevented publication.
27. Whyte 1984, p. 274.

V. The Importance of Field Research in Management Accounting

In 1985, the Harvard Business School invited thirteen prominent academics to carry out a study of a management accounting issue within actual organizations. As a result, these academics, many of whom had never before carried out field research, concluded that field research was an important part of management accounting research.[28] Other researchers into organizational behaviour also favour direct research making use of induction to make a "creative leap" to generate new theories.[29]

Management accounting exists to provide information for management about the multiple activities within organizations, so it is important that management accounting research occurs in the actual organizations where it takes place.[30] This enables understanding of the

> *"... management accounting phenomena [which] exist only in complex organizations with their rich interaction of people, products, processes, markets, technologies, and cultures."*[31]

Most accounting research uses analyses of simplified models of firms through using surveys or, to a limited extent, by carrying out experiments. These research methods have difficulty in capturing the effects of rapidly changing technology and increasingly sophisticated and complex markets. Nor would they indicate the obsolescence of techniques developed originally in the early part of this century.

These more traditional research methods are high on internal validity and are widely used and accepted by academic researchers. Each researcher is able to critically

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28. Bruns and Kaplan 1987, p. vii.
29. Mintzberg, 1979; Spicer, 1990
30. Scapens considers that case studies are particularly beneficial by being able to study management accounting as a part of a "unified social system", the firm [1990, p. 268].
31. Bruns and Kaplan 1987, p. 1.

examine each other's work to ensure "... the researcher's conclusions follow logically from the assumptions and methods used in the research".[32] This enables replication. However, whether research based on simplified models of the firm is valid for real management accounting issues faced in actual organizations is much less clear.[33]

Field research, on the other hand, more accurately represents the real world though its internal validity is much lower. As each organization is different from any other, it is difficult to replicate the research. In spite of the lower rigour, field research is very useful where phenomena are poorly documented or in a state of rapid change. Most management accounting issues are "... messy, indeterminate, [and] problematic...".[34] Traditional rigorous research focuses on introducing or refining models which are difficult or even impossible to put into practice and do not deal with the reality of management accounting.

A. The Case Study as a Management Accounting Field Research Tool

Case studies in management accounting benefit from this recognition that accounting cannot be fully understood outside of the organizational context in which it exists. They enable researchers to focus on how accounting and organizations work together. It is the behavioural impact of accounting which is important and this can only be observed in real organisations. Accounting is ideally suited to case study research because accountants use documented processes repetitiously, which means that these processes can be monitored over time or between organizations.

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32. Bruns and Kaplan 1987, p. 3.
33. Whyte [1984, pp. 284-287] believes that while much research focuses on "standard organisations" and seeks to refined standard ways of doing and managing things, this does not necessarily uncover ways in which organisations can be structured and managed to produce improved performance.
34. Professor Donald Schön quoted in Bruns and Kaplan 1987, p. 4.

As a field research tool, the case study has, at a minimum, exploratory value. Case studies involve "... intensive examinations of a single organizational unit during a single time period".[35] Bruns and Kaplan see the role of case studies as suggesting hypotheses and extensive insights into individual organizations. However, they suggest that no testing of hypotheses can be carried out and wide interpretations of the results are possible. However, they also believe that "... an aggregation of the single-company, single-period case studies provided insights and direction for significant new research".[36] New leads which develop during the case study may be discoveries.

Whyte,[37] on the other hand, believes that investigation into cases showing promising results can be more productive even if the results are not generalizable. He found that even an individual case could be critical in the conclusions which could be drawn from it. Even descriptive case studies can be important beyond being just the "early stage" of investigation. Also, one cannot be sure that research is evolutionary ie the "early stage" leads to "later stages"

Reconciling these two viewpoints is not difficult. Bruns and Kaplans' view is an illustration of the lack of development of this method in management accounting. Social science use of case studies dates back to early in this century so it is widely accepted for other than exploratory tasks. In time, the method should become accepted in management accounting research as well.

35. Bruns and Kaplan 1987, p. 8.
36. Bruns and Kaplan 1987, p. 9.
37. Whyte 1984, p. 285.

B. Is a Case Study Sufficiently Rigorous?

Physical science has a paradigm which controls rival hypotheses by eliminating them or at least rendering them implausible by carefully controlling laboratory conditions. The case study can fit into this paradigm[38] in that rival hypotheses can be specified and controlled for. However, the rigour of this process is lower because the plausibility reduction of rival hypotheses is unlikely to be fully achieved, a major cause being the inability to replicate the study.

Mintzberg believes that an obsession with rigour by organizational theorists has led to results which are "... significant only in the statistical sense of the word".[39] Therefore his research has relied on simple, often inelegant methodologies such as case studies.

Case studies should be used "... when you want to obtain a wealth of detail about your subject".[40] It serves as a source of clues and ideas for future research, and can provide a starting point for the study of new ideas. Narrowing down the emphasis so that a survey can be used may cause the essence of the situation to be missed. In fact, because there are multiple sources of evidence the case study can be a most powerful research design, provided that the evidence can be clearly traced to the conclusions.

Through the multiple sources of evidence, **triangulation** can be used to confirm findings. Triangulation is a map reading and survey term where, by using a baseline and known base angles, distances can be calculated. The term can be extended to mean that if the same conclusion can be drawn using separate, distinct pieces of

38. Campbell D.T., preface to Yin 1989, pp. 7-9.
39. Mintzberg 1979, p. 583.
40. Simon 1978, p. 206.

evidence, it increases the certainty that the conclusions are valid. There are several types of triangulation: multiple triangulation, data triangulation, investigator triangulation and theoretical triangulation.[41]

C. Rationale for a Single Holistic Case

A single holistic case is appropriate when it is a critical case for testing a well formulated theory. It is also appropriate when it is an extreme case or a revelatory case exposing some phenomenon not previously observable.[42]

However, care must be taken to avoid misrepresentations and to obtain access to all relevant information. For example, if the study is of a company, question responses may be given which relate to embedded units such as departments, rather than the entity as a whole. This causes question definitions to change which will weaken the strength of the outcomes.

D. Rationale Behind Multiple Case Studies

Replication is the rationale behind multiple case studies. Each case is considered to be an experiment[43] and the analysis is across the experiments rather than within any individual experiment. Each case should either *literally replicate* the findings of other cases or if different, those differences can be explained. This is called a *theoretical replication*.

41. Hakim, pp. 144-145.
42. Yin 1989, p. 47.
43. Scapens 1990, p. 270.

VI. Practical Implementation Issues

A. Design Problems

A research design is the logical investigation structure which enable a set of conclusions to be drawn about a set of questions on a real-life phenomenon. The case study must be designed in such a way that valid conclusions can be drawn.

Because of their flexibility, the tendency is to make up case study methods as the study proceeds. However, to be successful, the case study method requires that the researcher works objectively and continually reassesses the importance of the case study as it progresses. Successful researchers have to immerse themselves within the case and work hard and long.

Juggling the needs of various groups in the study must be taken into account when designing the study. Firstly, there are the sponsors of the project who must perceive a benefit from the study. Secondly, there are the subjects of the study, especially gatekeepers or collaborators who can be the key to gathering the correct data. Thirdly, it is important not to ruin the use of the site for colleagues contemplating future research possibilities.

Yin suggests that there are five key components to a case study. These components combine to form the basis for a preliminary theory[44] about the case:[45]

1. Questions.

   What do you want to know?

2. Propositions, if any.

   Narrows the areas to be investigated.

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44. Whyte [Whyte 1984, p. 275] suggests that what is needed is an orienting theory which indicates the phenomena to be observed. This theory may be quite simple. To build theories and investigate the practical effects of theories requires this firm foundation.

45. Yin 1989, pp. 29-35.

3. Units of analysis.

   Who and what is the study analysing? This relates to the questions.

4. The logic linking data to propositions.

   Techniques such as pattern matching or time-series patterns can be used.

5. Criteria for evaluation.

To generalize to a final theory, the method is "... 'analytic generalization,' in which a previously developed theory is used as a template with which to compare the empirical results of the case study."[46]

Any research design must conform to four criteria: [47]

1. construct validity[48] ie ensure that the types of measures support the units being analysed;
2. internal validity ie correctly identifying causal links and making valid inferences (this does not apply to exploratory case studies);
3. external validity ie generalizing from the case study results to a broader theory which may be replicable;
4. reliability ie another person carrying out the same steps in the same case will come to the same conclusions.

In addition, a successful study should adhere to some common sense, practical rules. It must stay within a budget. The right sorts of research staff must be retained and properly trained in interview and other required techniques. Ethical issues must be considered, especially when the researcher is an active participant. Finally, when analysing and reporting of data, care must be taken not to give an undigestable mass in the final report.

46. Yin 1989, p. 38.
47. Yin 1989, pp. 40-45.
48. See Hogan and Nicholson 1988 for a discussion of construct validity.

B. Data Collection Issues

This is the hardest part of a case study because data collection methods are not routine as in surveys or other methods. Because the study is in the real world, the researcher often has little control over the collection environment. One major problem is that the researcher may constrain the data by influencing the data supplier. However, the reliability of the case study is enhanced by the use of a protocol which focuses the researcher on the topic and helps anticipate problems when carrying out the data collection process.

Yin proposes three principles of data collection which enhance the reliability and construct validity of a case study:[49]

1. Using multiple sources of evidence such as interviews, documents and direct observation. This means that the conclusions of the case study derive from the convergence of evidence from different sources. Most other research techniques do not have this capability, eg surveys have verbal information only, not observational information.
2. A case study database must be created which is separate from the case study itself. Ideally other researchers can access the database for other purposes. For example, there should be an annotated bibliography of documents used in the case.
3. A chain of evidence must be maintained from the original research question to the case study report conclusions. This is achieved by adequate referencing of the analysis and conclusions to source data such as documents.

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49. Yin 1989, pp. 95-103.

C. Analysing the Case

In order to analyse the data, Yin suggests that a general analytic strategy is necessary. He suggests two possibilities.[50] Firstly, relying on theoretical propositions, which is used when the propositions have determined the study questions and data collection policies. Secondly, developing a case descriptive framework, which serves as a structure for organizing the study.

Under this framework a mode of analyzing the case is chosen. The most powerful is **pattern matching** where an empirical pattern of variables is compared with a predicted pattern to see how well they coincide. However, no statistical analysis is possible because each variable represents a single data point. Under this method, conclusions can normally be drawn only when there is a dramatic difference between the two patterns.

Another mode is **explanation-building**. This works by development of causal links about the phenomenon. The process can be iterative where initial propositions are updated allowing other data in the case to be compared to the revisions. Exploratory case studies make the best use of this technique.

A third technique is **time-series analysis** where the causal links build upon one another over time. This enables changes in a variable to be traced over time. These trends are compared against predicted trends or rival trends.

Whyte, on the other hand, suggests three different methods of analysing a case.[51] Firstly, follow some orienting theory and methodological strategy to a theoretical conclusion. Secondly, analyse through asking questions and challenging the answers. Thirdly, learn theory through action ie by taking actions in the case and

50. Yin 1989, pp. 106-109.
51. Whyte 1984, p. 229.

interpreting theory from the results of those actions. This last method seems to be similar to carrying out experiments.

In management accounting research, the first and third of Whyte's methods are most appropriate. There are many management accounting techniques which are examined theoretically but are not tested in an actual case. This method could improve the reliability of these techniques or challenge their usefulness. The third method is useful for examining and assessing new techniques such as Activity based costing. It can be experimentally applied and the results compared with predictions.

D. Assessing the External Validity of Case Study

According to Yin, external validity comes from generalising beyond the case study findings.[52] There are two sorts of generalisation, the most common being *statistical generalisation*. This is where statistical tests provide evidence about the strength of propositions relating some theory to a phenomenon. In other words, the sample enables conclusions to be drawn about the population.

The case method, on the other hand, employs the second method, *analytical generalization*. By analysing the case it is possible to generalize back to theory.

Spicer also refers to *relevance generalization*.[53] By this he means that companies with similar characteristics apply the "principles" of a descriptive case study to solve a similar problem. For example, companies adopt Just-in-Time (JiT) because of the success that others have in using this model to reduce inventory levels.

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52. Spicer 1990, p. 12, Yin 1989, pp. 43-44.
53. Spicer 1990, p. 12 based on Bruns and Kaplan 1987.

VII. What is a Good Case Study?

Yin believes that an exemplary case study has five characteristics.[54]

1. The case topic should be significant in that it is of unusual or of wide interest, and the underlying issues should be important in theoretical or practical terms.
2. The case must be complete; its boundaries shown to be at the point at which no further useful information can be obtained. All relevant evidence must be gathered.
3. The case analysis considers alternative perspectives and rival hypotheses or propositions.
4. The case displays sufficient evidence. All critical pieces of evidence should be included in the case study report in such a way that an independent analyst would reach the same conclusions. The chain of evidence must be maintained.
5. The case is composed in an engaging manner.

Bruns and Kaplan, have a slightly different perspective. They cite four criteria for good field research.[55]

1. The case subject matter should be significant and where possible have the "... potential for making significant advances in the conceptual development of a managerially relevant phenomenon".
2. Site choice and research method should be appropriate to the topic. Data collection should be rich, anecdotal and triangulated.

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54. Yin 1989, pp. 146-151.
55. Bruns and Kaplan 1987, pp. 5-8.

3. Good data presentation and interpretation with evidence that the researcher understood the topic. Data should be more than raw description and should be related to theory showing evidence either in support of or challenging existing wisdom.
4. Findings should be useful and coincide with practice.

Of the studies made for the 1987 Harvard Field Study Symposium hosted by Bruns and Kaplan, most fell short of the ideals. There were several reasons for this result. Many researchers, though experienced in other fields, had little field study experience. The general lack of field research in management accounting made study selection and design difficult. Finally, the studies were intended to be more in the nature of an analysis of field research as a method rather than serious, long term attempts to produce a new paradigm.

VIII. Conclusions

That the case study is a widely-used and powerful research tool seems to be evident from the literature. It has quite definite weaknesses which relate mainly to the difficulty of tightly controlling the design and implementation phases. However, it can generate rich results giving either insights into a phenomena to guide further research or a test of a conceptual theory. With care and diligence, most of the problems can be overcome.

Management accounting is currently in a state of flux as companies respond to a rapidly changing environment. Textbook solutions appear not to be working; most companies are developing their own internal systems and it is not evident which are successful and which are not. The case study seems to be a particularly suitable vehicle for research into management accounting during this period of change because it is only by studying individual companies can insights be gained to guide future research.

CHAPTER 7

THE CASE STUDY COMPANY - FISHER & PAYKEL LTD

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THE CASE STUDY COMPANY - FISHER & PAYKEL LTD

I. Introduction

Before it is possible to analyse the case study results it is necessary to consider the culture, organisational structure and strategy of Fisher and Paykel (hereafter F & P) as this has a significant effect on its use of product cost information. As one of New Zealand's major companies with revenues of $512 million in 1990, many believe F & P's success is due to good management and a distinctive company culture.[1] These two factors result in a commitment to supplying a high quality product to the company's customers. Much of the company's culture and strategy stems from a wholehearted adoption of W.E. Deming's management methods. These methods, which concentrate on quality, are said to have been highly influential in assisting the Japanese "Miracle".[2]

Section 1 of this chapter considers the culture of the company and briefly analyses its marketing strategy. Section 2 discusses the Refrigeration division's structure and its production methods. Finally, in section 3, the existing product costing system is described, together with the impact of accounting information, especially product costs, on decision making.

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1. Inkson K, B. Henshall, N. Marsh and G. Ellis ranked Fisher and Paykel as an excellent company in their book Theory K The Key to Excellence in New Zealand Management, David Bateman Ltd., Auckland, 1986 although the company declined to take part in their study. The company was selected as one of three top companies by the NZIM Top Management Seminar in Wellington in October 1984 (p. 13).
2. Schonberger R.J., Japanese Manufacturing Techniques, Nine Hidden Lessons in Simplicity, The Free Press, New York, 1982, p. 6.

SECTION 1

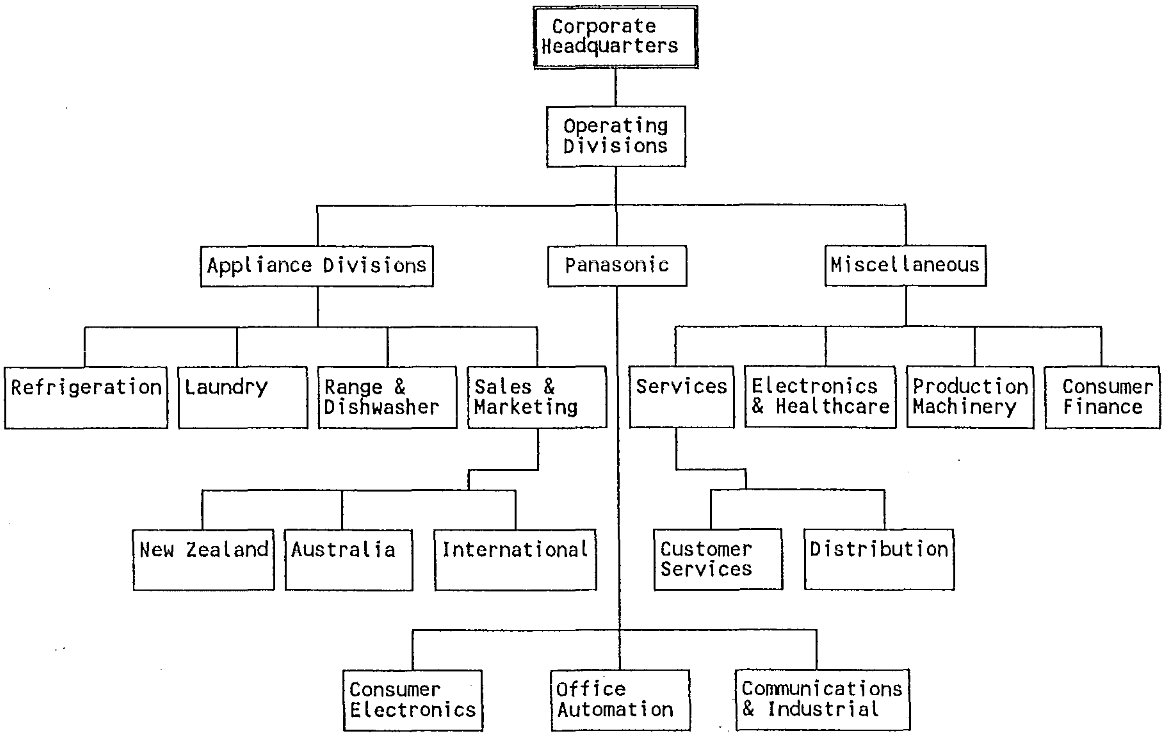
II. The Company and its Culture

F & P is predominantly a whiteware manufacturing company but also distributes Panasonic products for its Japanese partner, Matsushita. It has a divisional structure with widely separated divisions. The Range division is in Dunedin, the Laundry and Refrigeration divisions are in Auckland and in Australia a new refrigeration facility started production this year.

A. Corporate Structure

Figure 1

FISHER & PAYKEL CORPORATE STRUCTURE



B. Background History

F & P began operations in the early 1930s as an importer of whiteware appliances from the United States. In 1938, it began manufacture of licensed products in response to the Labour government's import licensing controls. By the early 1960s, the management of the company realised that the NZ market was too small to support the manufacture of mass-produced products in competition with imports. In order to continue as a viable firm, F & P has undertaken a highly successful drive for export markets.

At first, the company focused on manufacturing improvements to enable it to be price-competitive internationally. Now, the management believes it must be "... internationally marketable, which requires products containing quality and value to provide innovative solutions to meet customer needs".[3] To achieve this goal, the company has four strategic paths:

1. Unique Production Technology.

   F & P was one of the first companies in New Zealand to adopt flexible manufacturing. This manufacturing philosophy requires the use of plant which is able to be quickly adapted to produce any type of product within a given product line. Prior to adoption of this philosophy, F & P's plant, like any other mass-production facility, was best suited to long production runs of identical products.

   The company has pioneered many innovative processes, such as folding prepainted steel, using flexible manufacturing techniques, and developing electronic whiteware control systems. In addition, the company is a world leader in Computer Integrated Manufacturing (CIM). CIM enables the

3. F & P company profile, p. 6, part of the annual report

company to computerise the entire production process from the design stage, through the engineering and testing stages, to final production. It is made possible by techniques such as computer-aided design (CAD) and computer-aided manufacturing (CAM). CAD replaces conventional draughting techniques and in CAM the computer schedules the various production tasks and balances the production line.

As a result of this strategy, F & P has been able to sell automated production technology both in New Zealand and overseas as well making major improvements in its own production output.

2. Product Strategies.

The company has a full line strategy in the domestic market which has given it a base from which to service niche export markets. It has developed a strong market-oriented engineering force which enables it to quickly develop a wide range of customised products to suit particular markets. A country's culture has been identified by the company's management as a major influence on the type of products demanded by that country's market[4]. The management of the company believes that the ability to adapt quickly to customer needs is a major strategic strength.

However, a full line strategy can have disadvantages. It can lead to a proliferation of short run, customised products which require high levels of support from expensive, indirect departments. The experience of companies like Schrader Bellows[5] who used a full line strategy is that 80% of products

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4. As an example, the Australian consumer market wants large refrigerators with no butter conditioner. Other countries, such as the EEC countries, impose strict regulations on whiteware products which must be met by the company.

5. Cooper R., Schrader Bellows, A Strategic Cost Analysis, Harvard Business School Case #9-186-272.

are low volume and make losses. These loss-making products must be carried by the remaining 20% which are normally high volume.

3. Electronics.

   F & P has its own in-house electronics company. This, together with its close connection with Japanese electronics giant, Matsushita Electric, has enabled it to develop innovative whiteware electronic components. Many of these are licensed to overseas manufacturers such as General Electric Appliances.

4. People.

   The team philosophy is strong at F & P. Responsibility for quality is devolved to all levels from top management to individual workers. Just-in-Time production philosophies are used together with total quality control. Extensive use is made of statistical quality control measures and any employee can stop the production line if defects occur. This somewhat costly procedure has proved to be very successful with defect rates dropping dramatically.

   The company is in the process of sending all employees on an eighteen weeks course where different aspects of the company's operations are covered. Employees learn about subjects as diverse as finance and production technology. So far 70% of staff have attended this programme and it is considered by company management to be very successful.

III. Market Strategy

Three factors drive F & P's marketing strategy:

1. The company is market-driven rather than product-driven. It works hard to establish markets and the focus of all branches of the company is outwards to the customer.
2. The company seeks to maintain market share in the domestic market at all costs. Its legal dispute with the Commerce Commission over its Exclusive Dealing Arrangement (EDA) is evidence of this factor.
3. The company seeks to expand into new export markets.

In all three of these factors the management of the company takes a long term view. It is prepared to make short term losses while it establishes markets.

A result of this focus on customers has been a change of emphasis in product mix selection. Whereas four years ago, the strategy was to supply more differentiated products to their existing customers, F & P's strategy now, is to increase the customer base by supplying the existing range of products to more customers. The management refer to this process as "concentrating on the knitting". This means doing what the company does best rather than diversifying into new areas where the company has no expertise.

As a full line producer, F & P tries to exclude other competitors. There is a strong belief in both the marketing and production areas of the company that a full range of products must be provided, regardless of cost, in order to keep out competitors. If a market segment is abandoned because it is not profitable, a competitor will step in and supply that segment. Having established itself in the market, the competitor will compete for market share in other, more profitable market segments. Competition is intensifying in the local market so the company will even import products it does not make in order to protect its market share. Don Cooper, manager of the Refrigeration Division, said:

> *... there are a couple of products we import. ... If these products are not available in our network then it leaves an opening for our competitors to come in, so it is more important to have products within our range for strategic blocking reasons.*[6]

F & P does extensive market research, both formally and by keeping close to customers. Models are introduced, modified, or eliminated as the market changes. For example, New Zealand homes are decreasing in size so new, more compact models are being introduced.

There is a strong belief in the company that "export tends to be marginal business".[7] This stems from the idea that the normal volume (mainly generated by the domestic market) covers "fixed" costs plus providing a normal profit. Extra volume generated by export products provides extra profits. However, it is acknowledged that determining when the extra volume becomes part of "normal" volume is difficult.

Export product development is also seen to be beneficial by feeding back improvements into the more routine, local products. After viewing the amount of effort expended for relatively short-run export products, I think that it is likely that these products are more expensive than the management thinks. However, the fact that these products' costs are never quantified makes this theory hard to prove. Nevertheless there is some evidence. For example, over half the engineering effort is on export products while these form only 23% of the production volume forecast for the test period.[8]

The company competes on the basis of the features of its products rather than price. The marketing managers believe that the more features (complexity) which a

6. Interview with Mr. Don Cooper, Divisional manager of the Refrigeration division, Jan 1990.
7. Interview with Mr. Brett Butterworth, International marketing manager.
8. Export production of all models totalled 30,818. Local production totalled 103,790. Total production was 134,608.

product has, the easier it is to sell. The company is prepared to tailor products to suit particular markets and wants to extend this capability by expanding variation in products.[9]

Many of the costing problems faced by the company stem from its management's CER commitments with Australia. F & P has a large export market in Australia and must conform to anti-dumping legislation in that country. Its prices are extensively queried by Australian customs on the issue of dumping if they vary at all from prices in the New Zealand market. Therefore, through pricing issues, the company's product costing systems are strongly influenced by external factors.

Whiteware prices are considered to be fairly fixed in the marketplace. In fact, whiteware seems to be more in the nature of a commodity than a set of differentiated products. This mostly applies to export markets whereas, to some extent, the management feels it can influence prices in the domestic market. To escape fixed export prices, the company is attempting to enter niche markets where it can charge a premium for a differentiated product. It has also found that some markets are more sensitive to price than others. Where the market determines that price is important, the management finds that margins become crucial. In this case, product costs become very important to the marketing staff when negotiating the product mix with the production management. The marketing staff want to ensure that they "know they are paying their way"[10] by making a margin on top of a product's cost. However, production management do not use individual product costs for decision-making. This indicates that there might be some conflict of opinion between the production management and the marketing management over whether product costs are important.

9. Interview with Mr. Brett Butterworth, International marketing manager.
10. Interview with Mr. Brett Butterworth, International marketing manager.

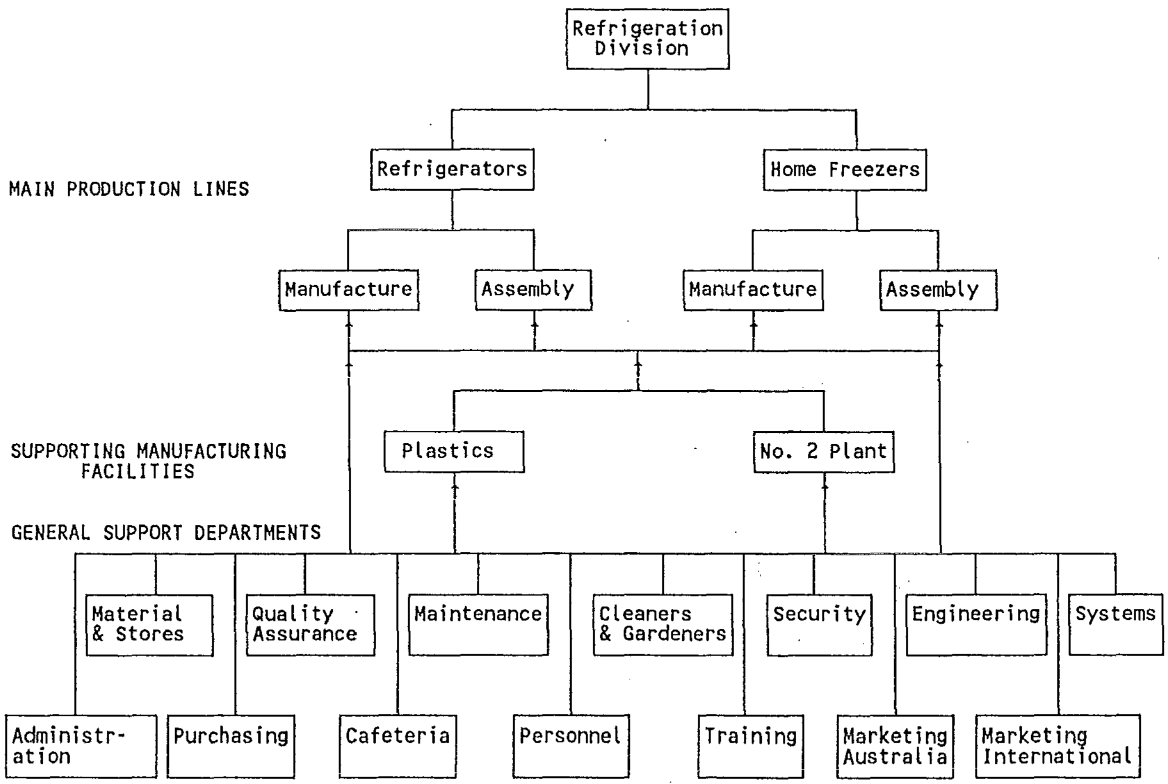
SECTION 2

IV. Refrigeration Division

The Refrigeration division began operations in 1972 in a purpose-built plant which incorporates extensive automated machinery and operates on a Just-in-Time[11] basis. The plant is broken into six production departments and fourteen support departments. See figure 2.

Figure 2

REFRIGERATION DIVISION ORGANISATIONAL STRUCTURE



The role of the Plastics and Number 2 Plant departments is to provide components for the manufacture and assembly departments of both refrigerator and home

11. See Schonberger, 1982.

freezer lines. The main purpose of the Number 2 Plant is to provide pre-painted steel in different lengths to suit each of the products which the company makes. These are transported to the beginning of both freezer and refrigerator assembly lines.

It is only in the Plastics department that JIT production principles are not strictly adhered to. Because it is a bottle-neck area and acknowledged to be the most complex department, components are produced for work-in-progress inventory. However, various systems such as automated storage racks are used to minimise inventory levels. In addition, the department operates on a 24 hour shift basis.

Because of the JIT manufacturing philosophy, the computerised manufacturing system is demand-pull. This means that nothing is produced if it has not been ordered. The scheduler decides on the mix of products based on the division's goal which is to produce every model every day but balances the production lines so that models are mixed. A major reason for this balancing is to make efficient use of the assembly line. As the line runs at a standard speed, an assembly worker has the same amount of time to work on each product passing by, regardless of its complexity.

> *You have got a P120 which is a little single temperature model [and] a bloody great Frost Free which has three doors, lots of things in it. If you have three of these in a row the guy's pushed all of the way down the line trying to do his job, whereas if you have one of them a 120, he has a chance to catch up, because he has nothing to do on that.*[12]

Through the bill of materials process of the Materials Requirements Planning (MRP) system[13], the computer forecasts the components required for production for up to twelve months ahead. The forecasts are used to purchase long lead time items so

12. Interview with Mr. Roger Cooper, Factory Manager, Jan 1990.
13. This systems will be discussed fully in the next section.

that the minimum necessary is kept in stock for production. As production progresses, components are drawn using the Kanban[14] system as they are required. Components which are manufactured by the production departments (Plastics, No. 2 Store and the two manufacturing departments) are only made when a Kanban arrives from the assembly line. Through the use of the Kanban system, work in progress inventories have been virtually eliminated.

Following the order of the product mix, the fully automated folder/notcher in each assembly line selects for each product, the appropriate sized sheet of steel from its stockpiles, notches it and folds it to form a cabinet. Each cabinet progresses down the assembly line and as it passes each station, the correct components are available and waiting for insertion into it. Statistical quality control measures are used and any worker finding defects is empowered to stop the assembly line until the defect is fixed. It takes three hours for a product to pass from a flat sheet of steel into a finished and tested refrigerator or freezer.

At the foam mould section of the assembly line, the sheet steel cabinet which has a vacuum formed plastic inner inside it, is placed within an appropriate mould to prevent the cabinet from distorting. Up to this point the cabinet is very flexible and delicate. Now polyurethane foam is pumped at high pressure between the cabinet and the liner to both stiffen it and provide insulation. There are 24 box sizes which can be used in the twelve foam moulds which are available. The rate at which products progress through the foam moulds and the time it takes to change moulds forms a production constraint which the factory management wish to minimise.

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14. Kanban is a Just-in-Time (JiT) production system developed by Toyota. For a full description on how it works see Schonberger R.J., Japanese Manufacturing Techniques, Nine Hidden Lessons in Simplicity, The Free Press, New York, 1982.

A lot of engineering effort is spent on introducing more general purpose moulds and speeding up mould changes to reduce the effect of this bottle-neck. The schedulers optimise the flow through this bottle-neck so that, while products are not produced exactly to order, they are produced within a few days of a customer placing a purchase order with the division.

Another production constraint is the Plastics department. To support the main production lines, this department operates on shift, in some cases 24 hour shifts. This is also the only area where work-in-progress inventory is allowed to accumulate, though this is minimised by the use of various systems including computerised racking.

The Achilles heel of the production system is its machinery. Almost all processes are automated so if a machine breaks down, the entire assembly line must stop until it is fixed. This problem has been substantially eliminated by a sophisticated, computer-based preventative maintenance system called Trident. This schedules replacement of components in machines before their life expires and is akin to an airline maintenance system. Planned shut-downs to carry out this maintenance prevent avoidable equipment failures.

Research into this system could be very useful. It may be possible to use some of Brimson's ideas for incorporating technology costs into product costs,[15] provided sufficient information is available within the system. Even if costs cannot be traced to products, it may be possible to trace technology costs to departments rather than simply recording depreciation. This will require that purchase costs,

15. For a discussion on the benefits of charging the costs of technology to products see Brimson J. A., "The CAM-I Cost Management Systems Project", Cost Accounting, Robotics and the New Manufacturing Environment, AAA, 1987, pp. 5.23-5.27.

maintenance costs, expected life and salvage values are available from the Trident system.

SECTION 3

V. Refrigeration Product Costing System

Senior managers in the division were interviewed to find out about the existing product costing system and their perceptions of its strengths and weaknesses.[16] Additional information about how the costing system was used and about product profitability was also gathered. The following section is based on these interviews and on direct observation of the division.

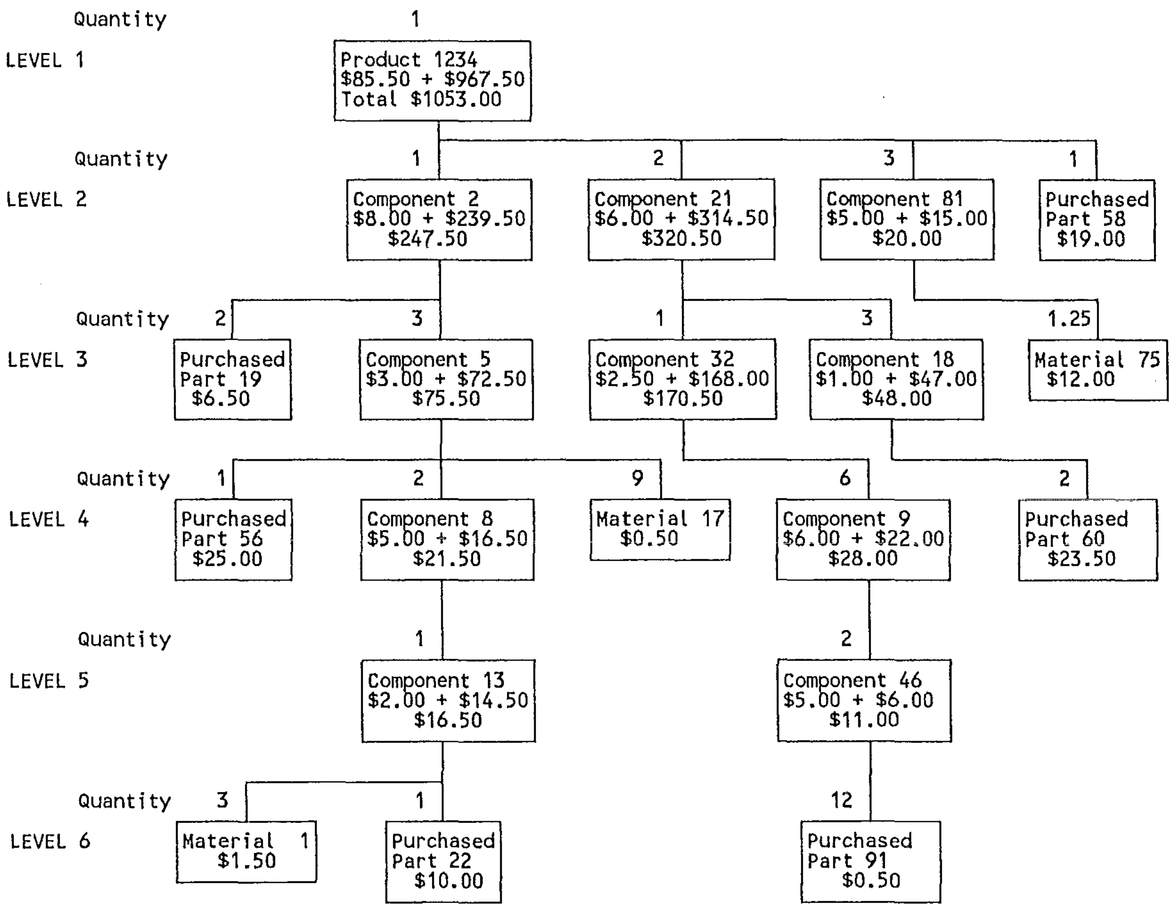
Because of the centralised computer control of the factory, it is essential for all support facilities, including accounting to be linked into the computer. A sophisticated MRP system is used as part of the production system though mainly for accounting purposes. This carries out many tasks, from forecasting production of components and products to calculating product costs. Forecasts are especially important for purchasing long lead time components.

Each product can be conceptualized as the top of an inverted tree of components, with each level of branches representing a cost accumulation point. This process is illustrated by the simplified example in Figure 3.

16. See the questionnaire in Appendix No. 4.

Figure 3

THE MRP PRODUCT COST CALCULATION SYSTEM



Note: Quantities are the figures at the top left of each box.

From this tree diagram it can be seen that by working down each branch emanating from any component, at any level, the individual constituent components can be determined. For example, 1 product of part number 1234 is made up as follows:

Type	Part No.	Quantity	Unit Cost	Total Cost
Component	2	1	$247.50	$247.50
Component	21	2	$320.50	$641.00
Component	81	3	$20.00	$60.00
Purchased Part	58	1	$19.00	$19.00
	Total			$967.50
Additional Cost			$85.50	$85.50
Total Cost Product 1234				$1,053.00

and that 1 component of part number 2 is made up as follows:

Type	Part No.	Quantity	Unit Cost	Total Cost
Purchased Part	19	2	$6.50	$13.00
Component	5	3	$75.50	$226.50
	Total			$239.50
Additional Cost			$8.00	$8.00
Total Cost Component 2				$247.50

and so on.

Thus a product's cost is accumulated from the lowest possible level, level 6, to the product level, level 1. At any level desired, the cost is the sum of the costs of constituent components at the next level down. This means for example that any level 2 component is the sum of the costs of all level 3 components from which it is made.

For an example of a product cost showing both the costing process and the levels see the Appendix No. 2 which shows part of the cost breakdown of a C370 refrigerator, part number 12869.

Despite the sophistication of the MRP package, the product costing system is very simple. It calculates a material and a labour direct cost then adds an overhead allocation based on a percentage of direct labour costs.

Materials forms, on average, about 70% of a product's cost. Some materials such as plastics and metals are purchased in raw form, while other materials are "purchased parts" such as compressors or electrical switches. Still other materials such as grease or cleaners are issued to the production line and a standard amount is attached to each product cost. The purchased-in cost plus delivery charges forms the material cost.

There are several different classes of labour depending on the department where the worker is located. It is possible for different rates to apply to each class although this facility does not appear to be used by the division. Labour standards are determined by engineering using the single labour rate. The MRP uses these standards to cost the labour part of each component's cost.

Currently only labour-based allocations of overhead are used (the system allows either a percentage on direct labour cost or a percentage on material cost). There is a facility to have different overhead burden rates for different classes of labour relating to different departments.[17] The percentages, which range from 180% to 350% for direct staff and 94% for support staff, are historical figures which have been in place for five years. They were calculated for each department by dividing total departmental overhead costs by the standard labour hours of the department. In addition to these costs, a percentage allowance is added for warranties and distribution costs.

When product costs are rolled up, the three classes of cost are kept separate. Therefore a product's total cost can be decomposed into a labour cost, a material cost and an overhead cost.

The marketing staff are dependent on the product costing system for making pricing decisions. Prices are set by taking the product cost from the system and adding a margin to it. This base price is then compared with competitor prices and adjusted if necessary. Marketing staff consider product costs to be very relevant to their work and believe them to be 85% reliable. However, they are not updated quickly enough nor does the product cost/pricing system provide information as fast as desired.

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17. See Appendix No. 5.

Ad hoc costing exercises are carried out for special purposes although traditional accounting principles such as allocating overhead on a percentage basis are used. The factory manager of the division, Roger Cooper, expressed concern over the rise in indirect costs. "A lot of people are conscious about the amount of engineering work that we do to develop a product that we may, at the end of the day, only sell one of". Mr. Cooper gave the example of purchase lead times. When a customer has an urgent need for a product, the division cannot speed up the purchase lead times by using, for example, air freight because the system cannot provide information on the extra costs incurred. This problem extends into routine production because some items have as much as a six month lead time. Purchases must therefore be based on forecasts which are often inaccurate. Costs to expedite are not recorded so Mr. Cooper worries that increased costs such as changing computer programs or extra people costs are hidden.

When Robin Cooper's tests for identifying a failing costing system are applied to F & P's product costing system, they show that it needs revision.[18] Many of the factors which he identified as indications of an obsolete costing system are present. Major factors present include increased automation, changes in product marketing strategy, simplification of manufacturing processes, intensified competition and deregulation.

VI. Influence of Accounting Information on Divisional Decision-Making

A. No Direct Use of the Costing System for Decision Making

Unit product costs are never used directly for decision making. They do not enter into product mix decision-making, capital budgeting questions or performance

18. Cooper R., "You Need a New Costing System When...", Harvard Business Review, Jan-Feb 1989.

evaluation. Instead, decisions are made:

1. on the basis of the division's overall performance.
2. for strategic marketing reasons.
3. on the basis of improvements to production efficiency.

The common perception of all senior managers is that materials are the only true variable cost although labour is treated as variable by the product costing system. All other costs are considered to be fixed within decision-making periods. If this is true, an increase in production will mean an increase in profits and, in the short term, the management could be right. However, they are conscious that indirect costs are growing in the long term and there are no control measures in place except budgets and monthly financial statements. Much of the divisional management effort is involved in eliminating direct labour. However, there appears to be no system to enable management to concentrate on "fixed" costs so that they can decide whether:

1. They are minimising the growth of that fixed cost.
2. They are adding value with a particular fixed cost.
3. They are using the fixed cost efficiently.

F & P justify the addition of indirect staff by the effect it has on the reduction of direct workers. Even though the immediate saving may be small eg $100,000 p.a. by eliminating four direct workers, this has a ripple effect as the reduction feeds downstream. The management believe that the efficiencies gained by indirect workers such as engineers not only allows the elimination of direct workers but also increases product quality. As a result, both the quality control effort of downstream workers and rework requirements are reduced. In fact, much of the capital expenditure on plant and the increase in indirect staff are considered to be interim steps on the way to increased automation which is seen by the senior divisional managers to be the key to the company's survival. Displaced direct staff are moved into other areas with retraining. However, the Division manager is concerned that the emphasis on reducing direct labour, which is only 5% - 10% of total costs, would be better concentrated on reducing the material cost which he considers to be nearer to 80% of product costs.

B. Identification of Value Adding / Non-Value Adding Costs

Products demand various activities in order to manufacture them and to place them in customers' hands. Some of these activities such as manufacturing processes, quality engineering and fast distribution, add value to the product. On the other hand, activities such as inspections, cleaning and rework do not add value. The goal of a company should be to eliminate non-value adding activities and make the most efficient use of value adding activities.

There is no accounting assistance to divisional managers for this issue. It is handled by management judgement based on non-accounting systems. For example, the factory manager has a chart which plots the working station of all staff. Those not involved in assembling products or manufacturing components are classified as indirect. Workers such as cleaners or those employed on correcting rejects can be identified as not adding value. Efforts are then made to eliminate the need for these workers by making the assembly process cleaner and by improving quality to eliminate rejects.

However, the division implements special teams to investigate the value of certain product lines. If market research suggests that a particular range of products is becoming uncompetitively priced in a particular market, the team will carry out a cost reduction exercise focusing on eliminating unnecessary components, making necessary components more simply and reducing product features. However, although inter-disciplinary teams are used, this process is engineering driven rather than resulting from the use of accounting information. These ad hoc costing exercises are another indication of an inappropriate costing system.[19]

C. Performance Evaluation

The focus of performance evaluation is on the overall profitability of the division. Regular divisional meetings are held in which results are compared with budgets. However cost control exercises relate more to control of non-financial measures such as the number of direct labour hours. Performance is checked daily against labour hour standards which are determined from the daily production totals.

> *The number of cabinets we pack today is an average of standard model packs. Say it's .5 of an hour and [we] pack 600 products, then we should have thrown at that day, 300 man hours. If we have done 310 hours we're working inefficiently, if we've done 290 we're working efficiently. ... It is very accurate over a long period of time but quite inaccurate over short periods.*[20]

Day to day control of the division is done virtually always on the basis of non-financial measures. The most important area where costs are used for control is in the area of wastage. Reject cabinet costs are tracked as a means of identifying the size of the wastage. Other areas which are converted into dollars to some degree are rework costs and machine down-time.[21]

Use of non-financial measures seems to come from the company's adoption of the principles developed by Deming and they subscribe to his 14 points for management (see Appendix No. 1).[22] The company has a commitment to quality

19. ibid.
20. Interview with Mr. Roger Cooper, Factory Manager, Jan 1990.
21. The rule of thumb adopted by the division's management is that the division incurs costs of $60,000 per hour while the assembly line is shut down. Shut downs occur for three main reasons: routine maintenance, machinery break down or through a severe quality problem as any worker can shut the line down if parts supplied to him or her are not of the correct quality. This is a great incentive to cure quality problems.
22. Deming 1982, pp. 16-50.

improvement and is prepared to forego short term profits in order to achieve these improvements.

The factory management believe strongly that production volume is the measure of efficiency. "What is going out the door is the key".[23] If that is low, then reject rates must be up or throughput must be down. This calls for immediate investigation and intervention by the key indirect staff and supervisors, especially the engineers. Daily production schedules (see Appendix No. 3) are early warning indicators of problems.

Two charts form the key to measuring the efficiency of the division. They are products per person per day and direct hours per product. This is justified on the grounds that

> *"... over any given period of time there is not a significant change in model mix and ... [the charts] are far simpler management tools to use to gauge whether we are better or worse off".*[24]

D. Capital Investment

When considering capital investments, the management of the company aims for a 40% long-run ROI on each investment. This seems to exclude relating capital costs to specific products because investment profitability goals do not appear to apply to individual products. Development costs are spread over the entire division rather than relating them to the products which caused them.

Wastage figures feed into the company's Major Expenditure Requests (MERs), the company's capital budgeting system. Because of the emphasis on quality, many capital projects are approved on the basis of reducing wastage. However, most

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23. Interview with Mr. Roger Cooper, Factory Manager, Jan 1990.

24 Interview with Mr. Don Cooper, Divisional manager of the Refrigeration division, Jan 1990.

MERs focus on reduction of direct workers so product costs are not included in the decision.

Detailed planning of projects is carried out at the beginning of each year, in which the rate of expenditure on projects is monitored closely to see how it is conforming to plans. These capital expenditure audits are, however, a fairly recent development. Management notes that "[i]n fact that is becoming more and more frequent because so often we have come up with this 40% ROI justification and they [the 40% ROI] are contrived in many cases"[25]. So whereas previously the expenditure was monitored to see if it conformed to the budget, now an assessment is being made to see whether the goals which were to be achieved by the expenditure are, in fact, being achieved.[26]

E. The General Ledger

As would be supposed, the general ledger seems to be set out in a conventional financial reporting format. While it has been divided into direct, support and other departments, the categories seem unclear. One very surprising example of this is that depreciation of plant and equipment is charged to the administration department, rather than according to the plant in each individual department. This caused distortions in the results of the ABC product costing exercise.

VII. The Product Mix Decision

The product mix decision is driven by the marketing people. If a market is perceived for a particular product and if those in authority can be convinced of this fact, then the product is added to the range. Profitability analysis, if any, is carried

25. Interview with Mr. Roger Cooper, Factory Manager, Jan 1990.

26. In fact the Division Manager, Don Cooper, has recently done an evaluation of capital expenditure to see what would have happened to the bottom line had the expenditure not taken place. The division management considers that the results of the analysis were very positive.

out above the Division's level but does not seem to influence the product mix decision. Instead the decision appears to be based on what the market wants rather than the profit generating capacity of a product.

However, the factory management is aware that some products make losses. The factory manager cites the example of a 280 litre refrigerator which was introduced at Christmas 1988 and intended for the Japanese market. Its implementation caused considerable disruption in the factory over 1989/1990 period yet the profit generating capability of the product in excess of its implementation and operational costs was not identified.

While there are various reasons for this problem, one of the most important is which many of the costs associated with a product are not traced to it. For example, engineering staff are attached to a project such as a new product development but their costs continue to be traced to their home department. The divisional management acknowledges that ABC may be a possible cure for this problem.

Product costs appear to be important to the divisional management for setting product price differentials between different markets. Many F & P products are sold in more than one market and may be more or less profitable in each market. Product costs are therefore useful for analyzing the effect of these differences.

VIII. Conclusions

Fisher and Paykel, by successfully competing in tough overseas markets, has shown itself to be one of New Zealand's best run companies. The Refrigeration Division of the company is highly automated and produces top quality products. Its computer system is able to fully support the production process but is less successful in determining product costs.

Product costs are not seen by the divisional management as relevant for any decisions except those relating to pricing. For control purposes, the division concentrates on non-financial measures such as actual output levels and reject rates. While it focuses continually on enhancing quality, most efficiency improvements revolve around elimination of direct labour workers. Improvements in this area often require growth in indirect areas such as engineering.

However, the division does not manage the growth of its indirect cost structure as well as it could owing to a lack of relevant information. It is not able to readily identify those activities which add value and those which do not and what each costs. Divisional managers acknowledge that this is an area which will have to be addressed in the future as competition increases. ABC may be able to provide this information as well as being able to assess the relative profitability of individual products.

IX. Appendices

Appendix No. 1

W.E. DEMING'S 14 POINTS FOR MANAGEMENT[27]

1. Create constancy of purpose for improvement of product and service, with a plan to become competitive and stay in business. Decide [to] whom top management report.

2. Adopt the new philosophy. We are in a new economic age. We can no longer live with commonly accepted levels of delays, mistakes, defective materials, and defective workmanship.

3. Cease dependence on mass inspection. Require, instead, statistical evidence that quality is built in, to eliminate need for inspection on a mass basis. Purchasing managers have a new job, and must learn it.

4. End the practice of awarding business on the basis of price tag. Instead, depend on meaningful measures of quality, along with price. Eliminate suppliers that can not qualify with statistical evidence of quality.

5. Find problems. It is management's job to work continually on the system (design, incoming materials, composition of material, maintenance, improvement of machine, training, supervision, retraining).

6. Institute modern methods of training on the job.

7. Institute modern methods of supervision of production workers. The responsibility of foremen must be changed from sheer numbers to quality. Improvement of quality will automatically improve productivity. Management must prepare to take immediate action on reports from foremen concerning barriers such as inherited defects, machines not maintained, poor tools, fuzzy operational directives.

8. Drive out fear, so that everyone may work effectively for the company.

9. Break down barriers between departments. People in research, design, sales, and production must work as a team, to foresee problems of production that may be encountered with various materials and specifications.

10. Eliminate numerical goals, posters, and slogans for the work force, asking for new levels of productivity without providing the methods.

11. Eliminate work standards that prescribe numerical quotas.

12. Remove barriers that stand between the hourly worker and his right to pride of workmanship.

13. Institute a vigorous program of education and retraining.

14. Create a structure in top management that will push every day on the above 13 points.

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27. Deming W.E., Quality, Productivity, and Competitive Position, Massachusetts Institute of Technology, 1982, pp. 16-17.

PRINTED 07-Feb-90 01:06 PM REFRIGERATION DIVISION BCI VERSION 13-JUL-88 PAGE

INDENTED COST LIST - WORK FILE

ASSEMBLY QTY FOR LEVEL 1: 1 DATE LAST ROLLUP: 22-Jan-90 EFFECTIVITY DATE: 21-Jan-90

LEVEL	PART NUMBER	ITEM NO	DESC	E S T R C Y UM	EXTENDED QTY PER	LABOR COST	LABOR BURDEN	MATERIAL COST	MATERIAL BURDEN	VENDOR COST	TOTAL COST
1	12869		C/KELV C370 J SASA	S * EA	1.0000	28.2431	53.3360	265.8833	0.0000	7.0347	354.4971
2	873701	005	PARTS CABINET FOAMED OYST C370	N * EA	1.0000	3.2101	5.8307	67.2926	0.0000	0.9180	77.2514
3	SP1014	005	SEALANT MASTIC SR14(200LT/DRUM)	P 3 LT	0.1000	0.0000	0.0000	0.3828	0.0000	0.0000	0.3828
3	871010	010	FLATE TAPPING TOP HINGE BRACKET	B F 1 EA	2.0000	0.0000	0.0000	0.1854	0.0000	0.2180	0.4034
4	M7132	005	COIL UNCOATED SPCC-SD 75MMX2.5	P 1 KG	0.1200	0.0000	0.0000	0.1855	0.0000	0.0000	0.1855
3	900407	014	HOT MELT FULAMELT HM8678(20KG BAG)	G P * KG	0.1275	0.0000	0.0000	0.8887	0.0000	0.0000	0.8887
3	SP1011	015	PUTTY PLASTIC NO 5 (20KG BAG)	P 3 KG	0.0930	0.0000	0.0000	0.2697	0.0000	0.0000	0.2697
3	900396	020	SPACER FOAM BARRIER PEF ROD(300MT)	B F * MT	0.1400	0.0000	0.0000	0.0350	0.0000	0.0000	0.0350
3	900455	025	TAPE VENTING 25MM(50M)	P 1 RL	0.0060	0.0000	0.0000	0.0672	0.0000	0.0000	0.0672
3	871380	065	DUCT HARNESS PC 1175MM ** PURCHASED PART HAS BILL **	B P 1 EA	1.0000	0.0000	0.0000	0.6100	0.0000	0.0000	0.6100
3	M9828	066	SEALANT MASTIC SNB 378ml CARTRIDGE	(7 EA	0.0010 ** FLOOR STOCK						
3	871463	069	COMPARTMENT PROV C365H.C370	N 1 EA	1.0000	2.5603	4.6360	35.1937	0.0000	0.7000	43.0910
4	879161	005	LINER PC FORMED & TRIMMED	A 1 EA	1.0000	1.2233	2.2020	16.7017	0.0000	0.0000	20.1270
5	900510	004	EXT SHT 3.6X750X1500MM WHITE	A 1 SH	0.8000	0.3680	0.6624	16.7017	0.0000	0.0000	17.7321
6	M2607	004	PLASTIC ABS MON CHEM RL939 WHITE	R 1 KG	3.6800	0.0000	0.0000	15.2860	0.0000	0.0000	15.2860
4	874483	007	BRACKET STIFFENER RF	A F * EA	2.0000	0.0000	0.0000	0.0860	0.0000	0.0000	0.0860
5	874702	005	BLANK BRACKET 2400X380X1.15MM	F * EA	0.0834	0.0000	0.0000	0.0860	0.0000	0.0000	0.0860
6	M7680	005	COIL ZINC GLENN 380+3-3X1.2MM	R * KG	0.7164	0.0000	0.0000	0.0860	0.0000	0.0000	0.0860
4	900310	008	TAPE 12.7MM SCOTCH 969 16.5M	A F * RL	0.0570	0.0000	0.0000	0.2901	0.0000	0.0000	0.2901
4	SP0623	009	TAPE 30MM PAPER 3M SCOTCH 227(55MT)	P 3 RL	0.0082	0.0000	0.0000	0.0246	0.0000	0.0000	0.0246
4	203353	010	REINFORCEMENT	A 1 EA	7.0000	0.0448	0.0805	0.0791	0.0000	0.0000	0.2044
5	M1901	005	PLASTIC ABS CRUSHINGS MULTICOLOUR	A 1 KG	0.0175	0.0000	0.0000	0.0788	0.0000	0.0000	0.0788
4	871459	011	REINFORCEMENT SMALL HC	A 1 EA	2.0000	0.0170	0.0306	0.0450	0.0000	0.0000	0.0926
5	M1901	005	PLASTIC ABS CRUSHINGS MULTICOLOUR	A 1 KG	0.0100	0.0000	0.0000	0.0450	0.0000	0.0000	0.0450
4	873458	012	REINFORCEMENT LARGE	A 1 EA	2.0000	0.0330	0.0594	0.1170	0.0000	0.0000	0.2094

Appendix No. 3

DAILY PRODUCTION - REFRIGERATION DIVISION EAST TAMAKI - 12-02-90

COMPACT REFRIGERATORS				AWARD REFRIGERATORS				NEW CHEST FREEZERS			
MODEL	1	2	TOT	MODEL	1	2	TOT	MODEL	1	2	TOT
KP120JWHWH 12962	5	0	5	FF310JWHWH 12854	1	0	1	F&PH160SJWHWHV812 15823	76	0	76
FP120JWHWH 12970	3	0	3	SF310JWHWH 12882	2	0	2	SH220EJWHWH 13020	4	0	4
SP120JWHWH 12980	2	0	2	F&PF310JWHWHV812 15842	19	0	19	F&PH220SJWHWHV812 15824	2	0	2
ESMKF160JWHWH 02784	1	0	1	FC335TJWHWH 12857	5	0	5	F&PH360SJWHWHV812 15825	14	0	14
KF160JWHWH 12964	9	0	9	SC335TJWHWH 12885	1	0	1	KH360SLJWHWHV802 12502	1	0	1
FF160JWHWH 12972	10	0	10	KC335TJWHWH 12956	17	0	17	SH510SLJWHWHV810 12520	7	0	7
F&PF160JWHWHV812 15859	5	0	5	F&PC335TZHWWWW 13042	11	0	11	SH701SLJWHWHV810 12521	20	0	20
KC170TJWHWH 12965	16	0	16	KC335TJWHWHV802 13128	1	0	1				
KC170TJWHWHV802 13102	2	0	2	LC335TJWHWHV802 13130	14	0	14				
SC170THWWWWV802 13159	4	0	4	FC365HJWHWH 12856	1	0	1				
F&PC170TJWHWHV812 15860	8	0	8	FN369BJWHWH 13070	7	0	7				
FF230JWHWH 12978	2	0	2	FC370JWHWH 12855	8	0	8				
F&PF230JWHWHV812 15862	1	0	1	KC370JWHWH 12955	21	0	21				
KC240BJWHWH 12968	10	0	10	F&PC370HZWWWW 13040	1	0	1				
FC240BJWHWH 12977	8	1	9	F&PC370JWHWHV812 15843	19	0	19				
F&PC240BJWHWHV812 15864	14	0	14	FN375TJSASA 12860	6	0	6				
KC250TJWHWH 12967	8	0	8	KN375TJSASA 12874	5	0	5				
FC250TJWHWH 12976	1	0	1	SPARE C375TWW 13086	2	0	2				
F&PC250TJWHWHV812 15863	19	0	19	LN375TJSASAV814 13255	4	0	4				

Appendix No. 4

MANAGEMENT QUESTIONNAIRE

SUBJECT: ANALYSIS OF THE EXISTING COSTING SYSTEM

INTERVIEWEE'S NAME: ____________________ DATE: ______

Questions
A. The Existing Formal Costing System

1. Where does the existing product cost information come from?

   Comments:

2. Describe the product costing system.

   Comments:

3. How do you use it and what do you use it for?

   1. Production Control: [Always, Sometimes, Occasionally, Never]
   2. Division Control: [Always, Sometimes, Occasionally, Never]
   3. Product mix: [Always, Sometimes, Occasionally, Never]
   4. Performance evaluation: [Always, Sometimes, Occasionally, Never]
   5. External reporting: [Always, Sometimes, Occasionally, Never]
   6. Other (specify)

4. How is management accounting data gathered?

   Comments:

5. If a standard cost system is used, how are standards determined? Is there any form of variance reporting?

   Comments:

6. What costs are allocated?

   Comments:

7. On what bases are allocations made? What allocation bases are used?

   Comments:

8. What relationship is there between the costs and the allocation bases?

   Comments:

B. Informal Information Systems

1. Do you have any informal systems for product costing and process control?
   [Yes No]

2. Describe briefly the systems you have:

   Comments:

3. How accurate do you think your informal system is compared with the formal system? What percentage of time would you use your own informal system compared to the formal system?

   Comments:

C. The Production Mix Decision

1. How is the production mix decision made? What causes some products to be selected for production and others to be deleted or ignored? Do you rely on long or short term data?

   Comments:

2. What is the relationship with the marketing department?

   Comments:

D. Product Pricing

1. Do you have any influence on price setting?
   [Yes some Little No]

2. Who decides on product profitability at the time of setting budgets?

   Comments:

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3. How is product profitability decided? ie what costs and prices are used. Is it cost driven or market driven?

   Comments:

4. Is there a profitability goal? Detail relationship between it and product costing issues.

   Comments:

E. Product Costing

1. Do you believe that the "true cost of a product" is different from the standards? How do you resolve that conflict?

   Comments:

2. Do you make a distinction between short and long term product mix decisions when using management accounting information? If so, how important is short term information compared to long term information (ie in the short term some costs are treated as fixed whereas all costs such as investment in plant become variable over the life of a product)? Do you use actual or budgeted data.

   Comments:

3. How are capital expenditure decisions made? Do product costs and profitability get fed into the capital expenditure system?

   Comments:

4. Do you use actual costs or budget/standard costs when making decisions where the cost of products is important (Eg production mix decisions)? Please describe why you have made the choice you have.

   Comments:

F. Usefulness of the Existing System

1. How expensive do you believe that this information is?

   Comments:

2. How satisfied are you with this information? What specific flaws do you believe that it has?

   Comments:

3. How satisfied are company accountants with this information? What flaws do they believe that it has?

   Comments:

4. How valid do you believe the current allocation bases to be?

   Comments:

5. How does the existing cost system perform in the following areas

   1. Relevance:

   2. Reliability:

   3. Timeliness:

6. Please indicate if any of the following factors seem significant to you:

   a. Do you feel the urge to drop products which the accounting systems says are profitable?

   [Yes Sometimes Seldom No]

   b. Do you find it difficult to explain profit margins?

   [Yes Sometimes Seldom No]

   c. Are those products which are more difficult to make, being shown be the existing system to be the most profitable?

   [Yes Frequently Seldom No]

   d. Do you have to urge to create your own costing system because you can't react fast enough to market forces with the official system?

   [Yes Sometimes Seldom No]

   e. Does the accounting department spend a lot of time on special projects such as determining accurate costs when the consequences of for example a materials sourcing decision ie should we buy it in or should we make it ourselves?

   [Yes Sometimes Seldom No]

   f. Do competitors prices seem unrealistically low?

   [Yes Sometimes Seldom No]

Appendix No. 4

g. Do customers mind price increases?

[Yes Sometimes Seldom No]

h. Do bids from outside vendors seem low compared to the cost of producing an item within the factory?

[Yes Sometimes Seldom No]

i. Have their been major changes in the way the support departments are being used?

[Yes A lot A Little No]

j. Has the company's marketing strategy changed?

[Yes A lot A Little No]

k. Has there been simplification of manufacturing processes?

[Yes A lot A Little No]

l. Has competition intensified?

[Yes A lot A Little No]

m. Has the strategy of the company changed.

[Yes A lot A Little No]

1. Has this had an impact on the behavioural goals of company employees where those goals are influenced by the accounting system?

[Yes A lot A Little No]

7. How do you identify non-value adding activities and their associated cost? For example how did you identify that JIT would save you money? Does this come from the existing formal system?

   Comments:

8. Can you identify specific products which you consider to be money losers?

   Comments:

9. Can you identify specific products which you consider to be money losers but are shown to be profitable by the existing product costing system?

   Comments:

10. Please grade the attached product list in order from 1 to ??? where 1 is the most profitable and ??? is the least profitable. If you have an informal product costing system, please put the figure at which your system costs each product.

W O R K   C E N T E R   F I L E   L I S T   B Y   W O R K   C E N T E R

WORK CNTR	T Y	DEPT	DESCRIPTION	PLANT LOC	MACHINE GROUP	NO. MACH.	SHIFT 1 AVAIL HOURS	OPR	SHIFT 2 AVAIL HOURS	OPR	SHIFT 3 AVAIL HOURS	OPR	PROD PCT	EQUIP AVAIL	STD LABOR HUR PCT	RATE	LABOR CLASS	QUEUE HRS/LOT
6070	L	38	NISSEI FS-170 MOULD M/C			1	8.0	1	0.0	0	0.0	0	100.0	100.0	200	10.500		0.00
6080	L	38	NISSEI FS-55 MOULD M/C			1	8.0	1	0.0	0	0.0	0	100.0	100.0	250	10.500		0.00
61	L	31	MATERIALS HAND M/C MAINT			0	8.0	1	0.0	0	0.0	0	100.0	100.0	0	0.000		0.00
6110	L	38	NEGRI-BOSSI 225 MOULD M/C			1	8.0	1	0.0	0	0.0	0	100.0	100.0	250	10.500		0.00
6120	L	38	NEGRI-BOSSI 266 MOULD M/C			1	8.0	1	0.0	0	0.0	0	100.0	100.0	250	10.500		0.00
6140	L	38	NEGRI-BOSSI 260 MOULD M/C			1	8.0	1	0.0	0	0.0	0	100.0	100.0	250	10.500		0.00
6160	L	38	NEGRI-BOSSI 500 MOULD M/C			1	8.0	1	0.0	0	0.0	0	100.0	100.0	350	10.500		0.00
62	L	31	STORES-BULK M/C MAINT			0	8.0	1	0.0	0	0.0	0	100.0	100.0	0	0.000		0.00
6200	L	38	NEGRI-BOSSI 700 MOULD M/C			1	8.0	1	0.0	0	0.0	0	100.0	100.0	350	10.500		0.00
64	L	64	MAINTENANCE STAFF			0	8.0	10	0.0	0	0.0	0	100.0	100.0	94	10.500	L	0.00
65	L	65	ELECTRICIANS			0	8.0	9	0.0	0	0.0	0	100.0	100.0	94	10.500		0.00
66	L	66	FITTERS			0	8.0	34	0.0	0	0.0	0	100.0	100.0	94	10.500		0.00
87	L	87	ADMINISTRATION			0	8.0	1	0.0	0	0.0	0	100.0	100.0	94	10.500		0.00
88	L	88	STAFF SERVICES			0	8.0	1	0.0	0	0.0	0	100.0	100.0	94	10.500		0.00
97	L	97	MIKE JENKINS ELECT.			0	8.0	1	0.0	0	0.0	0	100.0	100.0	0	18.000		0.00
98	L	98	ROY YOUNG ENGINEERING			0	8.0	1	0.0	0	0.0	0	100.0	100.0	0	18.000		0.00
99	L	99	ELECTRIX LTD			0	8.0	1	0.0	0	0.0	0	100.0	100.0	0	18.000		0.00
AR	L	MER	INTERNAL CAPITAL PROJECTS			0	8.0	1	0.0	0	0.0	0	100.0	100.0	0	0.000		0.00
AWLD	M	18	COOL.PLATE ASSY&ARGON WLD			0	8.0	1	0.0	0	0.0	0	100.0	100.0	180	10.500		0.00
BOY	L	38	MOULD M/C NOS 10/20/30/40		M	4	8.0	1	0.0	0	0.0	0	100.0	100.0	180	10.500		0.00
CSER	M	18	COND.STACK SERPENTINE			1	8.0	1	0.0	0	0.0	0	100.0	100.0	180	10.500		0.00
DOOR	L	05	DOOR FOAM & ASSY			0	8.0	1	0.0	0	0.0	0	100.0	100.0	180	10.500		0.00
FASY	L	03	CABINET FOAM ASSEMBLY			0	8.0	1	0.0	0	0.0	0	100.0	100.0	180	10.500		0.00
FLUD	M	15	FLUIDISER			1	8.0	1	0.0	0	0.0	0	100.0	100.0	180	10.500		0.00
FWLD	M	11	FEDRAL SKID WELDER			0	8.0	1	0.0	0	0.0	0	100.0	100.0	180	10.500		0.00
GASR	M	05	GASKET RETAINER MACHINE			1	8.0	1	0.0	0	0.0	0	100.0	100.0	180	10.500		0.00

CHAPTER 8

THE CASE STUDY METHOD APPLIED

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CHAPTER 8

THE CASE STUDY METHOD APPLIED

I. The Goals of the Study

The goal of the case study is as follows:

> Carry out a pilot implementation of an Activity-based costing (ABC) system focusing on non-production costs and analyse results in comparison with the existing absorption product costing system. Analysis of the actual production processes would not be included because of time constraints.

This goal is broken into the following more detailed goals. The study would:

1. identify the support activities carried out in the firm,
2. assess the difficulties of gathering the appropriate data for an ABC analysis,
3. assess the complexity of the calculation process,
4. determine the differences from the existing product costing system,
5. attempt a preliminary analysis of the profitability of products,
6. determine the implementation issues and problems,

The process of gathering data and calculating an Activity-based costing required eight inter-related steps. In this chapter each step will be detailed and analysed. Where appropriate, the results will be given as appendices at the end of the chapter.

II. The Study Steps

Step 1 - Gathering Preliminary Source Data.

The first step was to interview senior management of the Division in order to establish ground rules and also gather over-view data. This data includes a list of all products and their components. The list was generated from the computerised Materials Requirement Planning system (MRP) based on actual production for December plus forecast production for the following eleven months. It was necessary to use the forecast data because the MRP is a dynamic system and does not store data for very long. It maintains a window showing the previous month, the current month and the forecast for the next twelve months at any one time. At the end of each month it dumps the previous month and starts the process again.

A copy of this forecast data was put into separate computer files so that it could be frozen over the case study period. In the normal course of events, the files are continually updated as prices and standards change and actual results are recorded.

The files contained:

1. The projected production of each product for the next twelve months.
2. The projected production of each type of component, plus the raw material and purchased part usage for the period. This was determined from the forecast sales of each product (see the previous chapter for a discussion of the MRP component explosion process).
3. The current raw material and purchased part cost, which constitute the only direct or volume related costs which were to be included in the analysis. As labour is less than 10% of total costs, it was not traced separately and is therefore included with the other overhead costs of each department.
4. The current labour standards (used for the traditional product costing process).

Financial data were also gathered at this point. The selling price and current system cost price was determined for each product. In addition, the budget for the period was obtained so that the value of the cost pools could be determined[refer Appendix No. 1]. While the budget did not correspond exactly to the same period as the production figures, there was some overlap and I considered it sufficiently accurate for the analysis. In addition, I was assured by the financial controller that there would have been no material difference between the existing budget and one that could have been prepared for the projected production period.

Budgeted data were chosen for the costing process because of the strategic nature of ABC. As it is to be used for making decisions about the future, it seemed appropriate to use future oriented data rather than historical costs from the previous twelve months.

Step 2 - Determining the Activities.

In order to determine the resource centres of the Division, the Factory Manager, Roger Cooper, was interviewed. He was able to assure me that the organisational structure of the Division coincided materially with its functional structure. As costs are traced to departments, I could assume that a department is equivalent to a resource centre.[1] Also, as activities occur within departments, I did not need to worry about resource flows occurring across departmental boundaries which simplified the first stage of the costing process.[2] For clarity, the term department will be used for the rest of this chapter in place of the term resource centre.

The manager of each department was interviewed to establish:

1. What were the main activities carried out in each department.
2. How many staff were employed in the department.
3. How were those staff allocated to the activities in the department.

---

1. This also means that a resource is equivalent to an Activity centre as defined in chapter 3, p. 6.
2. A more detailed costing analysis would require more investigation of this point to increase confidence in the value of the cost pools.

4. What were the factors which drove each activity. This was quite difficult as often there was not a clear cost driver.

Appendix No. 2 shows the questionnaire used to elicit this information from the managers.

Step 3 - Calculating the Cost Pools.

The total cost of each department was determined from the budget. Using the analysis from the questionnaire, the activities carried out within each department were identified. The cost of each department was apportioned into cost pools based on these activities using staff numbers as the first stage cost driver. The percentage of the total department staff associated with each activity determined the proportion of department costs to be traced to that activity. There may well be other stage one cost drivers which are more important or more appropriate than staff numbers but these could not be identified for this study.[3] If the company were to carry out a full implementation, a deeper analysis of stage one cost drivers would be necessary.

As many staff in a department can transfer from one activity to another to meet exigencies of their department's role, it was necessary to find out the average allocation of staff to an activity. To achieve this, managers were asked to decide how many people, on average (ie over one year), work on a particular activity rather than identify specific individuals with specific activities.

Table 1 shows how the Administration costs were divided among the activities carried out in this department using the number of staff working on each activity.

3. This is especially the case when the factory is fully automated and the few staff which there are fulfil multiple functions.

Table 1

ADMINISTRATION FIRST STAGE COST TRACING

Activity	Staff	Percent	Cost Traced
A/cs Payable/Data Input	3.00	22.22%	$654,653
Asset Register	0.67	4.96%	$146,206
Costing Export	2.16	16.00%	$471,350
Costing Local	0.24	1.78%	$52,372
Secretarial Services/Budgets	6.63	49.11%	$1,446,783
Projects	0.80	5.93%	$174,575
	13.50	100.00%	$2,945,939

See Appendix No. 3 for the calculations for each department.

Having identified the cost pools, it was found that they fell into two classes. Firstly, there were cost pools which relate directly to products or components. These will be called **Direct Cost Pools**. Secondly, there were indirect cost pools which relate to other departments and their activities rather than to products. These pools will be called **Intermediate Cost Pools.**

The intermediate cost pools occurred because some activities were not demanded directly by products but indirectly through other departments. For example, maintenance costs occur because departments need their plant and equipment maintained. Therefore, maintenance costs are traced to departments rather than products. The most important fact about intermediate cost pools is that they are entirely consumed by other cost pools and their value will eventually become zero.

Some of the departments are composed entirely of direct cost pools. Others comprised entirely intermediate cost pools such as Maintenance and Personnel/Training. Finally, some departments such as Engineering were a mixture of both direct and intermediate cost pools. Table 2 shows the breakdown of all 14 departments into these three types.

Table 2

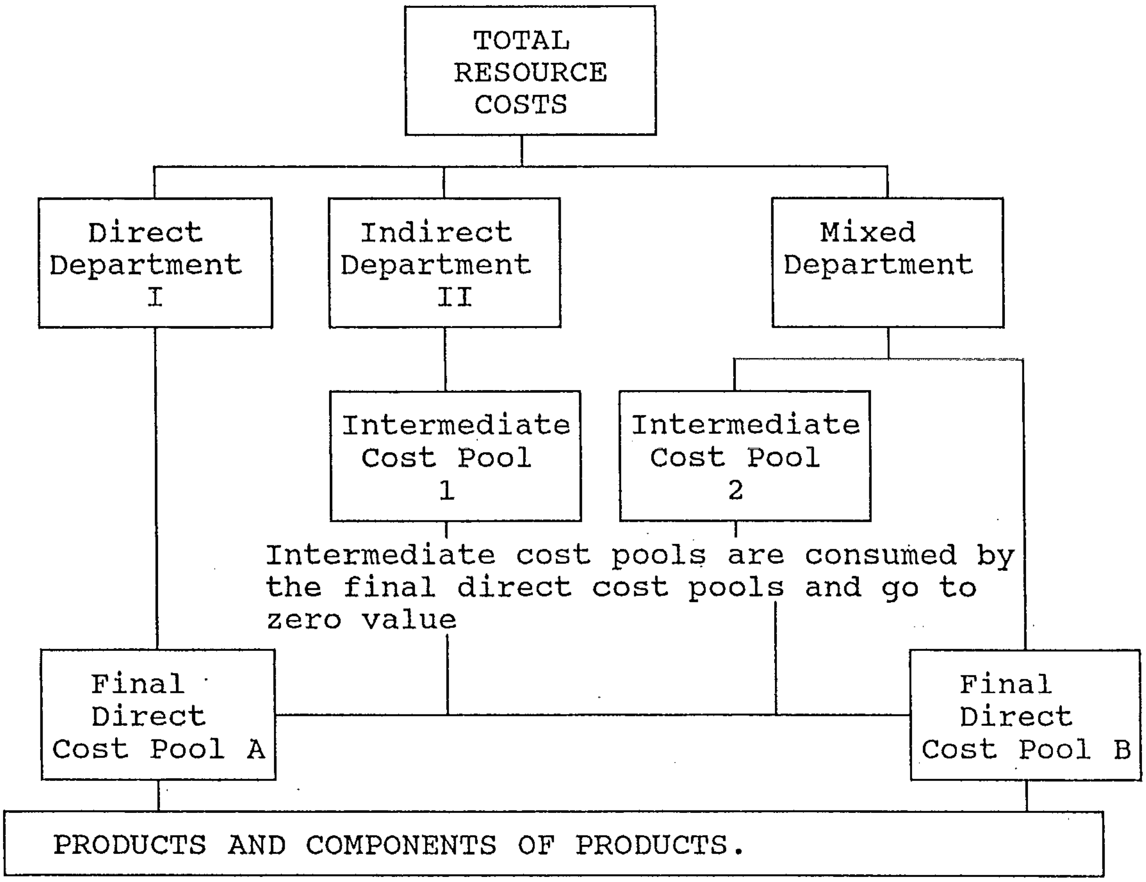
BREAKDOWN OF RESOURCE TYPES

Direct Department:	Indirect Department:	Mixed Department:
Refrigerator Manufacturing	Cleaners/Gardeners/Security	Systems
Refrigerator Assembly	Cafeteria	Administration
Home Freezer Manufacturing	Personnel/Training	Purchasing
Home Freezer Assembly	Quality Assurance	Materials and Stores
Plastics	Maintenance	Engineering
Number Two Plant		

Figure 1 illustrates the three different types of departments and the two different types of cost pools.

Figure 1

THE ACTIVITY BASED COSTING PROCESS



The value of each intermediate cost pool is the sum of its original value (as calculated in the first part of this step) plus a share of the other intermediate cost pools, based on its use of those cost pools. Intermediate cost pools make use of each other as well as supplying services to direct cost pools. As this use is reciprocal, this must be taken into account in the cost calculation process.[4]

As this usage accrues to the department rather than the cost pools themselves, it is pro-rated according to the number of staff involved in the activity to which the intermediate pool relates. See step 4 for an example of how this is calculated.

The cost of an intermediate cost pool can be expressed as follows:

> Intermediate cost pool = Initial value + reciprocal share of each other intermediate cost pool
>
> Where the share of any pool may be zero.

Direct cost pools consist of the original cost plus a share of each intermediate cost pool. This can be expressed as follows:

> Direct cost pools = Initial value + share of each intermediate cost pool
>
> Where the share of any pool may be zero.

The production departments became direct cost pools <u>in total</u> because of the decision to not do an analysis of the actual production processes.

One example of each of the indirect resources and the mixed resources is shown in figure 2 to illustrate how they split into cost pools of each type.

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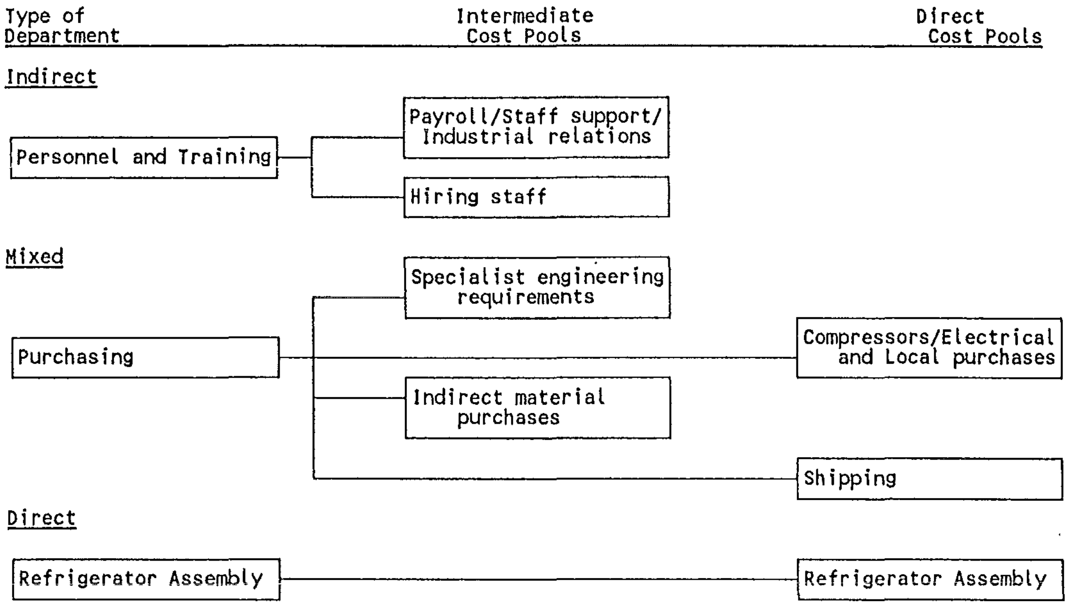
4. See step 4.

Figure 2

EXAMPLES OF MIXED AND INDIRECT RESOURCES



From the departments, 42 cost pools were determined as shown in Appendix No. 3. Table 3 presents a breakdown of cost pools by value and percentage:

Step 4 - Assigning Activity Costs.

Data was gathered for each cost driver.[5] Frequently, the data on a cost driver was not available so a surrogate had to be found, for example, it was not possible to find out how often raw materials were purchased. However, each raw material is classified under a "Component"[6] code such as CAXP. Items in each component code are purchased only once or twice a year so "Number of Times Component Code is Purchased" was used as a cost driver in place of "Number of Times Part Number was Purchased. Data from the component code could be extrapolated to the appropriate raw material part numbers under each code.

5. This information on the cost drivers is not attached to the study but is filed in the University of Canterbury Accounting department library where it is available for perusal by anyone who is interested.

6. This is an F & P term with a specific meaning to the company and must not be confused with the general meaning of the term.

Table 3
COST POOLS USED IN THE CASE STUDY

Pool Type		No. Pools	Initial Value	Percent	Cost Driver
Intermediate Cost Pools					
Systems 1	Work for Departments	1	$95,683	0.37%	Staff Allocated
Admin 2	Asset Register	1	$146,206	0.56%	Plant Value
Admin 5	Secretarial Services/Budgets	1	$1,446,783	5.55%	Dept Operating Costs
C/S 1	Cleaners	1	$381,011	1.46%	Dept Complexity
C/S 2	Gardeners/security	1	$190,505	0.73%	Manager's Judgement
Cafe	Cafeteria Workers	1	$323,884	1.24%	Staff per Department
Purch 1	Specialist Engineering Reqts	1	$43,493	0.17%	MER's
Purch 2	Indirect material purchasing	1	$40,593	0.16%	Manager's Judgement
P/T 1	Payroll/Staff Support/Ind.Rln	1	$328,222	1.26%	No. Staff per Dept.
P/T 2	Hiring	1	$82,055	0.31%	Staff T/O per Dept.
QA 1	Process Assist/Data / Sec	1	$511,787	1.96%	Dept. Complexity
QA 2	Vendor Customer Feedback	1	$106,546	0.41%	Dept. Complexity
Eng 7	Plant Support/General/CAD	1	$496,858	1.91%	Dept. Complexity
Eng 8	Plant improvements	1	$402,279	1.54%	Plant Complexity
Maint 1	Preventative maint/Sched. Short Term planning & Sched Training Liaison	1	$1,495,596	5.74%	Plant Complexity
Maint 2	Breakdowns	1	$421,295	1.62%	Maint. Labour Charge
Maint 3	Building Mods	1	$84,259	0.32%	MERS
Subtotals		17	$6,597,055	25.31%	
Direct Cost Pools					
Systems 2	Work on Products	1	$222,121	2.51%	Forecast Production
Admin 1	Accounts Payable/Data Input	1	$654,653	1.81%	Commodity Purchases
Admin 3	Costing Export	1	$471,350	0.20%	Forecast Export Prodn
Admin 4	Costing Local	1	$52,372	0.85%	Forecast Local Prodn
Purch 3	Compressors/Electrical/Local	1	$120,693	0.46%	Commodity Purchases
Purch 4	Shipping	1	$48,929	0.19%	Receipts into Store
Stores 1	Inwards Goods/Storage/Data	1	$377,425	1.45%	Receipts into Store
Stores 2	Despatch to Production	1	$434,039	1.67%	Issues to prodn
Stores 3	Stock Check	1	$66,049	0.25%	No items in store
Stores 4	Despatch for Rework	1	$28,307	0.11%	Requests for rework
Stores 5	Despatch of Spares(Cust Svs)	1	$99,074	0.38%	Number of Stock lines
Stores 6	Despatch for Distribution	1	$75,485	0.29%	Forecast Production
Stores 7	Factory Support	1	$240,609	0.92%	Forecast Production
Eng 1	Compact	1	$126,247	0.48%	Local Prodn Compact
Eng 2	Award	1	$196,860	0.76%	Local Prodn Award
Eng 3	Chest Freezer	1	$72,753	0.28%	Local Prodn C/Freezer
Eng 4	Export Compact	1	$62,054	0.24%	Export Prodn Compact
Eng 5	Export Award	1	$119,828	0.46%	Export Prodn Award
Eng 6	Export Chest Freezer	1	$49,215	0.19%	Export Prodn C/Freezer
Home Freezer Manufacture		1	$1,321,707	5.07%	HF Prod wgtd by Component Cnt
Home Freezer Assembly		1	$1,487,891	5.71%	HF Prod wgtd by Component Cnt
Refrigerator Manufacture		1	$2,993,008	11.48%	RF Prod wgtd by Component Cnt
Refrigerator Assembly		1	$4,388,711	16.84%	RF Prod wgtd by Component Cnt
Plastics Manufacture		1	$3,951,578	15.16%	Plastics Component Prodn Vol
Number 2 Plant		1	$1,803,448	6.93%	No 2 Plant Component Prodn Vol
Subtotals		25	$19,464,406	74.69%	
Subtotals Intermediates Cost Pools		17	$6,597,055	25.31%	
Subtotals Final Direct Cost Pools		25	$19,464,406	74.69%	
Totals		42	$26,061,461	100.00%	

Normally the cost drivers were external transactions of some kind such as component purchase orders.[7] However, in some cases they were management estimates or complexity factors. Complexity factors were used firstly, for tracing some of the intermediate cost pools. For example, each user department was given a complexity factor and this was used to trace maintenance and cleaning costs to the other departments. Secondly, the component count of each product was used as a surrogate for the complexity of the product. This was then used as the cost driver to trace factory overhead for the main manufacturing and assembly departments for both the refrigerator and freezer production line.

Once the data was obtained on each driver it was separated into two sets, those relating to intermediate cost pools and those relating to direct cost pools. The data on each cost driver consisted of a list of cost objectives and the number of cost driver units associated with each. For example, if the cost objective was components, there would be a list of components together with the quantity each part number required of the cost driver. On the other hand, with intermediate cost pool there would be the list of pools with the associated quantity of the cost driver. At the bottom of each cost driver list, was the total quantity of the cost driver for the case study period.

The set of cost driver data relating to intermediate cost pools was then used to determine the use each intermediate cost pool made of other intermediate cost pools. [Refer Appendix no. 4]. Carrying on the example in step 3, it can be seen from Appendix no. 4 that the Administration department makes use of other activities. These include:[8]

7. See chapter 3 for an explanation of the use of transactions as cost drivers.

8. For details of these activities refer to appendix no. 3.

Table 4

ADMINISTRATION USE OF OTHER INTERMEDIATE COST POOLS

Cost Pool	Variable Name	Proportionate Use
Administration activity no. 5	A5	0.0056
Cleaning and security activity no. 2	CS2	0.0033
Cafeteria	Cafe	0.0013
Purchasing Activity no. 1	P1	0.0047
Personnel and training activities 1	PT1	0.0013
Personnel and training activities 2	PT2	0.0020
Maintenance activities 2	M2	0.0003
Maintenance activities 3	M3	0.0047
Systems activity no. 1.	SYS1	0.0019

The proportionate use of each of these activities is determined by whether the cost driver is applied to the department as a whole, or to a specific cost pool. If it applies to the department as a whole, it is apportioned according to the number of staff in each activity, as a proportion of the total staff (excluding those working on capital works).[9] The example below shows how this proportion is calculated for the Admin 2 cost pool of the Administration department.

$$\text{Proportion} = \frac{0.67}{3.1 - 0.8} = 0.05276$$

Cleaners and Security, pool C/S 2 is used equally by all departments according to the judgement of the Financial Controller. This means that 0.0625 of the cost of that pool is traced to each department. Using the proportion calculated above for the Admin 2 cost pool, the amount of C/S 2 traced is:

$$\text{Amount of C/S 2 traced to Admin 2} = 0.5276 * 0.0625 = 0.0033$$

As a result of this proportioning process and the use of all cost drivers relating to indirect cost pools, the final cost of the Administration No. 2 cost pool can be

9. Any activities which were of a capital nature were excluded from the costing process.

expressed as:

$$\text{Admin 2} = \$146{,}206 + 0.0056\ \text{A5} + 0.0033\ \text{CS2} + 0.0013\ \text{Cafe} + 0.0047\ \text{P1} + 0.0013\ \text{PT1} + 0.0020\ \text{PT2} + 0.0003\ \text{M2} + 0.0047\ \text{M3} + 0.0019\ \text{SYS1}$$

Refer to appendix no. 5 to show the use each intermediate cost pools makes, of other intermediate cost pools.

Step 5 - Elimination of Intermediate Cost Pools.

In the first part of this step, the intermediate cost pools were eliminated by using the same technique as reciprocal service department allocations in a traditional costing system[10]. In order to use this process, indirect cost pools were treated as if they were "service departments". [Refer to Appendices 6 and 7 for the calculations].

Some of these intermediate cost pools consisted of pools for which the cost driver was not particularly appropriate. It is acknowledged that in some cases the process amounted to an allocation rather than cost tracing. This was especially the case for hard to trace items such as Security costs and Gardening costs.

Finally, the reciprocal amounts of each intermediate cost pool were multiplied out by the formula derived in step 4 above. This caused the value of all intermediate departments to go to zero as they were traced to the final direct cost pools. [Refer appendix 8].

Step 6 - Calculating the Cost Driver Costs.

In this step, the final cost drivers (transactions) were matched to each direct cost pool. By dividing the total pool size by the total number of cost driver units, a cost

10. Horngren C.T. and Foster G., Cost Accounting, A Managerial Emphasis, 6th Ed., Prentice-Hall, 1987, pp. 425-427; Hirsch M.L., J.G. Louderback III and E. Smith, Cost Accounting Accumulation, Analysis and Use, Nelson, 1989, pp. 425-426.

per cost driver unit was determined. This was the most time consuming task of the case study and generated a lot of data.

It can be seen from Appendix No. 3 that often, more than one cost pool has the same cost driver. This means that the pools could have been amalgamated into a single large pool. I decided not to do this because there is useful information to be gained through leaving the pools separate. It enables the managers to see what the various activities of their department cost them, which is particularly useful for managing activities to manage costs.

Step 7 - Tracing Costs to Products.

Each part number could be either a raw material item, a purchased-in part, an intermediate component (which is produced at an intermediate stage of the production process) or a finished product. Activity costs could be generated for a part number of any kind depending on which part number a cost driver unit applied to. The activity cost was calculated by multiplying the cost driver quantity by the cost per cost driver unit. Once this had been done for every cost pool, the cost pool amounts for each part number was summed and divided by the total production quantity for that part number. This gave an Activity cost per part number.

As a check to ensure that the amounts were reliable, the costs for each part number were multiplied back out and reconciled with the original total budget figures.

The amount for each part number was entered into the MRP system and "Rolled Up" as described in Chapter 7. The MRP system was rolled up twice. The first time calculated the material costs for each part number; the second, the activity costs for each. These two amounts were added together to produce an Activity-based product cost.

Step 8 - Comparison With F & P's Product Costs.

A report was produced which compared the original product cost using F & P's existing system and the Activity-based cost. This report was evaluated and sections of it submitted to the plant managers as part of the final questionnaire. For a full analysis of the results of this report, see chapter 10.

III. Conclusion

The study required eight individual steps in order to calculate and evaluate an Activity-based costing of Fisher & Paykel's products. It was found to be impossible to trace some costs directly to products, although these costs could be traced to other cost pools. Accordingly all cost pools were classified as Direct where they are traced directly to products and Intermediate where they were traced to other cost pools.

The Intermediate cost pools were eliminated by reciprocal allocations using the service department allocation method. Once all costs were included in the Final Direct cost pools by these means, they were traced to components and products using the appropriate cost drivers.

While the calculations were complex, they were not difficult and were readily handled by spreadsheets such as Lotus 123 and Microsoft Excel. A major part of the calculation process was handled by incorporation in the company's MRP system. Identification of cost drivers and data collection were the two most difficult parts of the process.

IV. Appendices

Appendix No. 1

FISHER AND PAYKEL

1989 BUDGET

MANUFACTURING

Plastics	$3,951,578
No 2 Plant	$1,803,448
Refrigeration Manuf	$2,993,008
Refrigeration Assy	$4,388,711
Home Freeze Manuf	$1,321,707
Home Freeze Assy	$1,487,891
TOTAL	$15,946,343

SUPPORT COSTS

Materials & Stores	$1,320,988
Quality Assurance	$661,318
Maintenance	$2,485,639
Cleaners and garden	$424,690
Security	$146,826
TOTAL	$5,039,461

OTHER DEPARTMENT COSTS

Administration	$2,945,939
Engineering	$2,139,783
Purchasing	$253,708
Systems	$317,804
Cafeteria	$323,884
Personnel	$328,568
Training	$81,709
Australia	$379,566
International	$647,508
TOTAL	$7,418,469
Manufacturing	$15,946,343
Support Costs	$5,039,461
Total Costs	$28,404,273
Plus Excluded Costs	
Shut-down adjustment	($1,800,000)
Head Office Allocation	$12,013,800
Reconciled Balance (To the F & P Budget)	$38,618,073
Total Costs	$28,404,273
Less Marketing Costs	$1,027,074
COSTS TO BE TRACED	$27,377,199

This budget was used as the basis for the Activity Based Costing System. Capital expenditure and certain marketing costs were excluded.

Appendix No. 2

QUESTIONNAIRE FOR RESOURCE MANAGERS

1. What is the function of your department?

   Comments:

2. What are the main tasks which you carry out?

   Comments:

3. What parts of the production line do you service?

   Comments:

4. What products are you mainly concerned with?

   Comments:

5. Of the department's tasks, which are the most significant?

   Comments:

6. Can you order these tasks for me in terms of the amount of effort required from your department? (use the task list)

7. How would your personal time divide amongst these tasks?

   Comments:

8. How many staff are there in your department? ______________

9. Of the tasks you have given me, how many of your staff are allocated to each task? (use the task list)

TASK LIST

Task No.	Details	Sup	No. Staff	Task Cost
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Appendix No. 3

COST POOL AND COST DRIVER DESIGNATION

DEPARTMENT NAME: **SYSTEMS**
DEPARTMENT COST $317,804
STAFFING
MANAGER 1
STAFF 9
10

TASK No.	DETAILS	PERCENT	COST	DRIVER
1	Work for Departments	30.1075%	$95,683	Staff Allocated
2	Work on Products	69.8925%	$222,120	Forecast Production
		100.0000%	$317,803	

DEPARTMENT NAME **ADMINISTRATION**
DEPARTMENT COST $2,945,939
STAFFING
MANAGER 1.0
STAFF 12.5
13.5

TASK No.	DETAILS	STAFF	COST	DRIVER
1	A/cs Payable/Data Input	3.00	$654,653	Commodity Purchases
2	Asset Register	0.67	$146,206	Plant Value
3	Costing Export	2.16	$471,350	Forecast Export Production
4	Costing Local	0.24	$52,372	Forecast Local Production
5	Secretarial Services/Budgets	6.63	$1,446,783	Dept Operating Costs
6	Projects	0.80	$174,575	Capitalise
		13.50	$2,945,939	

DEPARTMENT NAME: **CLEANERS/GARDENERS/SECURITY**
DEPARTMENT COST
Cleaners & Gardeners $424,690
Security $146,826
TOTAL COST $571,516

STAFFING
MANAGER 1
STAFF 11
12

TASK No.	DETAILS	STAFF	COST	DRIVER
1	Cleaners	8	$381,011	Dept Complexity
2	Gardeners/security	4	$190,505	Manager's Judgement
		12.	$571,516	

DEPARTMENT NAME: **CAFETERIA**
DEPARTMENT COST $323,884
STAFFING
MANAGER 1
STAFF 6
7

TASK No.	DETAILS	STAFF	COST	DRIVER
1	Cafeteria Workers	7	$323,884	Staff per Department

DEPARTMENT NAME **PURCHASING**
DEPARTMENT COST $253,708
STAFFING
MANAGER 1
STAFF 6
7

TASK No.	DETAILS	STAFF	COST	DRIVER
1	Specialist Engineering Reqts	1.20	$43,493	MER's
2	Indirect material purchasing	1.12	$40,593	Manager's Judgement
3	Compressors/Electrical/Local	3.33	$120,693	Commodity Purchases
4	Shipping	1.35	$48,929	Receipts into Store
		7.00	$253,708	

DEPARTMENT NAME **PERSONNEL/TRAINING**
DEPARTMENT COST
Personnel $328,568
Training $81,709
$410,277
STAFFING
MANAGER 2
STAFF 9
11

TASK No.	DETAILS	STAFF	COST	DRIVER
1	Payroll/Staff Support/ Industrial Relns	8.80	$328,222	No. Staff per Dept.
2	Hiring	2.20	$82,055	Staff T/O per Dept.
		11.00	$410,277	

DEPARTMENT NAME **QUALITY ASSURANCE**
DEPARTMENT COST $661,318
STAFFING
MANAGER 1
STAFF 17
18

TASK No.	DETAILS	STAFF	COST	DRIVER
1	Process Assist/Data / Sec	13.93	$511,787	Dept. Complexity
2	Vendor Customer Feedback	2.90	$106,546	Dept. Complexity
3	R & D	1.17	$42,985	Capitalise
		18.00	$661,318	

DEPARTMENT NAME **MATERIALS AND STORES**
DEPARTMENT COST $1,320,988
STAFFING
MANAGER 2
STAFF 26
28

TASK No.	DETAILS	STAFF	COST	DRIVER
1	Inwards Goods/Storage/Data	8.00	$377,425	Receipts into Store
2	Despatch to Production	9.20	$434,039	Issues to production
3	Stock Check	1.40	$66,049	No items in store
4	Despatch for Rework	0.60	$28,307	Requests for rework
5	Despatch of Spares(Cust Svs)	2.10	$99,074	Number of Stock lines
6	Despatch for Distribution	1.60	$75,485	Forecast Production
7	Factory Support	5.10	$240,609	Forecast Production
		28.00	$1,320,988	

DEPARTMENT NAME	**ENGINEERING**
DEPARTMENT COST	$2,139,783
STAFFING	
MANAGER	2
STAFF	48
	50

TASK No.	DETAILS	STAFF	COST	DRIVER
1	Compact	2.95	$126,247	Local Production Compact
2	Award	4.60	$196,860	Local Production Award
3	Chest Freezer	1.70	$72,753	Local Production C/Freezer
4	Export Compact	1.45	$62,054	Export Production Compact
5	Export Award	2.80	$119,828	Export Production Award
6	Export Chest Freezer	1.15	$49,215	Export Production C/Freezer
7	Plant Support/General/CAD	11.61	$496,858	Dept. Complexity
8	Plant improvements	9.40	$402,279	Plant Complexity
9	R & D Team	10.80	$462,193	R & D - Capitalize
10	CAD Training Dev.	2.64	$112,981	R & D - Capitalize
11	Australian Factory	0.90	$38,515	R & D - Capitalize
		50.00	$2,139,783	
	Non-Capital Total		$1,526,094	

DEPARTMENT NAME	**MAINTENANCE**
DEPARTMENT COST	$2,485,639
STAFFING	59

TASK No.	DETAILS	STAFF	COST	DRIVER
1	Preventative maint/Sched. Short Term planning & Scheduling Training Liaison	35.50	$1,495,596	Plant Complexity
2	Breakdowns	10.00	$421,295	Maintenance Labour Charge
3	Building Mods	2.00	$84,259	MERS
4	Capital Works	11.50	$484,489	Capitalize
		59.00	$2,485,639	
	Non-Capital Work		$2,001,150	

DEPARTMENT NAME	**HOME FREEZER MANUFACTURE**
DEPARTMENT COST	$1,321,707
COST DRIVER	HF Production Volume weighted by Component Count

DEPARTMENT NAME	**HOME FREEZER ASSEMBLY**
DEPARTMENT COST	$1,487,891
COST DRIVER	HF Production Volume weighted by Component Count

DEPARTMENT NAME	**REFRIGERATOR MANUFACTURE**
DEPARTMENT COST	$2,993,008
COST DRIVER	RF Production Volume weighted by Component Count

DEPARTMENT NAME	**REFRIGERATOR ASSEMBLY**
DEPARTMENT COST	$4,388,711
COST DRIVER	RF Production Volume weighted by Component Count

DEPARTMENT NAME	**PLASTICS**
DEPARTMENT COST	$3,951,578
COST DRIVER	Plastics Component Production Volume

DEPARTMENT NAME	**NUMBER TWO PLANT**
DEPARTMENT COST	$1,803,448
COST DRIVER	No Two Plant Component Production Volume

TOTAL COST OF DEPARTMENTS	$27,377,199
Check figure from budget	$27,377,199

Appendix No. 4

MATRIX FOR WORKING OUT PROPORTIONATE USE BY EACH DEPARTMENT BASED ON COST DRIVERS

	COST DRIVERS	DIVISOR	ADMIN 2	ADMIN 5	C/S 1	C/S 2	CAFE	PURCH 1	PURCH 2	P/T 1	P/T 2
AMOUNT			$146,206	$1,446,783	$381,011	$190,505	$323,884	$43,493	$40,593	$328,222	$82,055
PROPORTION			0.05276	0.52205	0.66667	0.33333	1.00000	0.17143	0.16000	0.80000	0.20000
DEPARTMENT											
ADMIN 2	Asset Value	$51,542,620	$1	$0	$0	$106,945	$256,006	$0	$0	$219,015	$219,015
ADMIN 5	Dept. Op. Costs	$25,930,416	$146,206	$1,446,783	$381,011	$190,505	$323,884	$43,493	$40,593	$328,222	$82,055
C/S 1	Complexity		0	0	1	0	0	0	0	0	0
C/S 2	Manager's Judgement		0.0033	0.0326	0.0625		0.0625	0.0107	0.0100	0.0500	0.0125
CAFE	Staff per Dept.	613.00	15	15	13	13	1	7	7	9	9
PURCH 1	MER's	90.00	0.4220	4.1763							
PURCH 2	Manager's Judgement		0	0	0	0	0	0	1	0	0
P/T 1	Staff per Dept.	612.00	0.0013	0.0128	0.0142	0.0071	0.0131	0.002	0.0018	1	0
P/T 2	Staff Turnover	156.00	0.002	0.0201	0	0	0.0128	0	0	0	1
ENG 7	Complexity		0	0	1	0	0	0	0	0	0
ENG 8	Complexity		0	0	1	0	0	0	0	0	0
MAINT 1	Complexity		0	0	1	0	0	0	0	0	0
MAINT 2	Dept. Maint Charge	46,153.65	12.7601	126.2676	124.29	0	32.91	1.6714	1.56	1844.424	461.106
MAINT 3	MER's	90.00	0.4220	4.1763							
QA 1	Complexity		0	0	1	0	0	0	0	0	0
QA 2	Complexity		0	0	1	0	0	0	0	0	0
SYS 1	Staff Allocated	28.00	1	1	0	0	0	1	1	2	2

	ENG 7	ENG 8	MAINT 1	MAINT 2	MAINT 3	QA 1	QA 2	SYS 1	ADMIN1	ADMIN 3	ADMIN 4
	$496,858	$402,279	$1,495,596	$421,295	$84,259	$511,787	$106,546	$95,683	$654,653	$471,350	$52,372
	0.32557	0.26360	0.74737	0.21053	0.04211	0.82769	0.17231	0.30108	0.23622	0.17008	0.01890
DEPARTMENT											
ADMIN 2	$1,174,967	$1,174,967	$878,763	$878,763	$878,763	$773,672	$773,672	$0	$0	$0	$0
ADMIN 5	$496,858	$402,279	$1,495,596	$421,295	$84,259	$511,787	$106,546	$95,683	$654,653	$471,350	$52,372
C/S 1	0	0	0	0	0	0	0	0	0	0	0
C/S 2	0.0203	0.0165	0.0467	0.0132	0.0026	0.0517	0.0108	0.0188	0.0148	0.0106	0.0012
CAFE	54	54	59	59	59	18	18	8	15	15	15
PURCH 1	3.2557	2.6360				1.6554	0.3446	1.5054	1.8898	1.3606	0.1512
PURCH 2	0.0417	0.0417	0.0417	0.0417	0.0417	0	0	0	0	0	0
P/T 1	0.0287	0.0233	0.0721	0.0203	0.0041	0.0243	0.0051	0.0039	0.0058	0.0042	0.0005
P/T 2	0.0459	0.0372	0.024	0.0067	0.0013	0.0159	0.0033	0.0096	0.0091	0.0065	0.0007
ENG 7	0	0	0	0	0	0	0	0	0	0	0
ENG 8	0	0	0	0	0	0	0	0	0	0	0
MAINT 1	0	0	0	0	0	0	0	0	0	0	0
MAINT 2	1393.2749	1128.0606	1	0	0	359.0844	74.7556	672.3733	57.1346	41.1369	4.5708
MAINT 3	3.2557	2.6360				1.6554	0.3446	1.5054	1.8898	1.3606	0.1512
QA 1	0	0	0	0	0	0	0	0	0	0	0
QA 2	0	0	0	0	0	0	0	0	0	0	0
SYS 1	20	20	1	1	1	2	2	1	1	1	1

Appendix No. 4

	SYS 2	PURCH 3	PURCH 4	STORE 1	STORE 2	STORE 3	STORE 4	STORE 5	STORE 6	STORE 7	ENG 1
	$222,121	$120,693	$48,929	$377,425	$434,039	$66,049	$28,307	$99,074	$75,485	$240,609	$126,247
	0.69892	0.47571	0.19286	0.28571	0.32857	0.05000	0.02143	0.07500	0.05714	0.18214	0.08273
DEPARTMENT											
ADMIN 2	$0	$0	$0	$1,362,657	$1,362,657	$1,362,657	$1,362,657	$1,362,657	$1,362,657	$1,362,657	$1,174,967
ADMIN 5	$222,121	$120,693	$48,929	$377,425	$434,039	$66,049	$28,307	$99,074	$75,485	$240,609	$126,247
C/S 1	0	0	0	0	0	0	0	0	0	0	0
C/S 2	0.0437	0.0297	0.0121	0.0179	0.0205	0.0031	0.0013	0.0047	0.0036	0.0114	0.0052
CAFE	8	7	7	30	30	30	30	30	30	30	54
PURCH 1	3.4946			1.7143	1.9714	0.3000	0.1286	0.4500	0.3429	1.0929	0.8273
PURCH 2	0	0	0	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417
P/T 1	0.0091	0.0054	0.0022	0.014	0.0161	0.0025	0.0011	0.0037	0.0028	0.0089	0.0073
P/T 2	0.0224	0	0	0.011	0.0126	0.0019	0.0008	0.0029	0.0022	0.007	0.0117
ENG 7	0	0	0	0	0	0	0	0	0	0	0
ENG 8	0	0	0	0	0	0	0	0	0	0	0
MAINT 1	0	0	0	0	0	0	0	0	0	0	0
MAINT 2	1560.8667	4.6382	1.8804	155.4371	178.7527	27.2015	11.6578	40.8023	31.0874	99.0912	354.019
MAINT 3	3.4946			1.7143	1.9714	0.3000	0.1286	0.4500	0.3429	1.0929	0.8273
QA 1	0	0	0	0	0	0	0	0	0	0	0
QA 2	0	0	0	0	0	0	0	0	0	0	0
SYS 1	0	1	1	1	1	1	1	1	1	1	20

	ENG 2	ENG 3	ENG 4	ENG 5	ENG 6	HF MAN	HF ASS	RF MAN	RF ASS	PLAS	NO.2 P
	$196,860	$72,753	$62,054	$119,828	$49,215	$1,321,707	$1,487,891	$2,993,008	$4,388,711	$3,951,578	$1,803,448
	0.12900	0.04767	0.04066	0.07852	0.03225	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
DEPARTMENT											
ADMIN 2	$1,174,967	$1,174,967	$1,174,967	$1,174,967	$1,174,967	$6,004,951	$470,882	$13,152,852	$2,022,266	$19,634,084	$5,485,558
ADMIN 5	$196,860	$72,753	$62,054	$119,828	$49,215	$1,321,707	$1,487,891	$2,993,008	$4,388,711	$3,951,578	$1,803,448
C/S 1	0	0	0	0	0	0.12903	0.06452	0.32258	0.09677	0.32258	0.06452
C/S 2	0.0081	0.0030	0.0025	0.0049	0.0020	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625
CAFE	54	54	54	54	54	42	90.5	124.5	66	66	10
PURCH 1	1.2900	0.4767	0.4066	0.7852	0.3225	6.0000	4.0000	8.0000	13.0000	16.0000	12.0000
PURCH 2	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0409
P/T 1	0.0114	0.0042	0.0036	0.0069	0.0028	0.0686	0.1479	0.2034	0.1078	0.1078	0.0179
P/T 2	0.0182	0.0067	0.0057	0.0111	0.0045	0.1699	0.0641	0.2276	0.1538	0.0708	0
ENG 7	0	0	0	0	0	0.12903	0.06452	0.32258	0.09677	0.32258	0.06452
ENG 8	0	0	0	0	0	0.12903	0.06452	0.32258	0.09677	0.32258	0.06452
MAINT 1	0	0	0	0	0	0.12903	0.06452	0.32258	0.09677	0.32258	0.06452
MAINT 2	552.0297	204.011	174.0094	336.0181	138.0074	1177.03	974.11	14208.1	12265.04	6895.35	428.13
MAINT 3	1.2900	0.4767	0.4066	0.7852	0.3225	6.0000	4.0000	8.0000	13.0000	16.0000	12.0000
QA 1	0	0	0	0	0	0.12903	0.06452	0.32258	0.09677	0.32258	0.06452
QA 2	0	0	0	0	0	0.12903	0.06452	0.32258	0.09677	0.32258	0.06452
SYS 1	20	20	20	20	20	0	0	0	0	0	0

Where there are multiple cost pools from one resource department, the cost drivers are apportioned in relation to the number of staff in each cost pool.

Appendix No. 5

MATRIX OF DEPARTMENTS WITH PROPORTIONATE USE BY OTHER DEPARTMENTS

eg A2 = 146,206 + 0.0056 A5 + 0.0033 C/S2 +......

DEPARTMENT	COST DRIVER	ADMIN 2	ADMIN 5	C/S 1	C/S 2	CAFE	PURCH 1	PURCH 2	P/T 1	P/T 2	ENG 7
AMOUNT		$146,206	$1,446,783	$381,011	$190,505	$323,884	$43,493	$40,593	$328,222	$82,055	$496,858
ADMIN 2	Asset Value	1.0000	0.0000	0.0000	0.0021	0.0050	0.0000	0.0000	0.0034	0.0008	0.0074
ADMIN 5	Dept. Op. Costs	0.0056	1.0000	0.0147	0.0073	0.0125	0.0017	0.0016	0.0127	0.0032	0.0192
C/S 1	Complexity	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
C/S 2	Manager's Judgement	0.0033	0.0326	0.0625	1.0000	0.0625	0.0107	0.0100	0.0500	0.0125	0.0203
CAFE	Staff per Dept.	0.0013	0.0128	0.0141	0.0071	1.0000	0.0020	0.0018	0.0117	0.0029	0.0287
PURCH 1	MER's	0.0047	0.0464	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0362
PURCH 2	Manager's Judgement	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0417
P/T 1	Staff per Dept.	0.0013	0.0128	0.0142	0.0071	0.0131	0.0020	0.0018	1.0000	0.0000	0.0287
P/T 2	Staff Turnover	0.0020	0.0201	0.0000	0.0000	0.0128	0.0000	0.0000	0.0000	1.0000	0.0459
ENG 7	Complexity	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
ENG 8	Complexity	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MAINT 1	Complexity	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MAINT 2	Dept. Maint Charge	0.0003	0.0027	0.0027	0.0000	0.0007	0.0000	0.0000	0.0400	0.0100	0.0302
MAINT 3	MER's	0.0047	0.0464	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0362
QA 1	Complexity	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
QA 2	Complexity	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SYS 1	Staff Allocated	0.0019	0.0186	0.0000	0.0000	0.0000	0.0061	0.0057	0.0571	0.0143	0.2326

DEPARTMENT	ENG 8	MAINT 1	MAINT 2	MAINT 3	QA 1	QA 2	SYS 1	ADMIN1	ADMIN 3	ADMIN 4	SYS 2
AMOUNT	$402,279	$1,495,596	$421,295	$84,259	$511,787	$106,546	$95,683	$654,653	$471,350	$52,372	$222,121
ADMIN 2	0.0060	0.0127	0.0036	0.0007	0.0124	0.0026	0.0000	0.0000	0.0000	0.0000	0.0000
ADMIN 5	0.0155	0.0577	0.0162	0.0032	0.0197	0.0041	0.0037	0.0523	0.0182	0.0020	0.0086
C/S 1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
C/S 2	0.0165	0.0467	0.0132	0.0026	0.0517	0.0108	0.0188	0.0148	0.0106	0.0012	0.0437
CAFE	0.0232	0.0719	0.0203	0.0041	0.0243	0.0051	0.0039	0.0058	0.0042	0.0005	0.0091
PURCH 1	0.0293	0.0000	0.0000	0.0000	0.0184	0.0038	0.0167	0.0210	0.0151	0.0017	0.0388
PURCH 2	0.0417	0.0417	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
P/T 1	0.0233	0.0721	0.0203	0.0041	0.0243	0.0051	0.0039	0.0058	0.0042	0.0005	0.0091
P/T 2	0.0372	0.0240	0.0067	0.0013	0.0159	0.0033	0.0096	0.0091	0.0065	0.0007	0.0224
ENG 7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENG 8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MAINT 1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MAINT 2	0.0244	0.0000	1.0000	0.0000	0.0078	0.0016	0.0146	0.0012	0.0009	0.0001	0.0338
MAINT 3	0.0293	0.0000	0.0000	1.0000	0.0184	0.0038	0.0167	0.0210	0.0151	0.0017	0.0388
QA 1	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
QA 2	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SYS 1	0.1883	0.0267	0.0075	0.0015	0.0591	0.0123	1.0000	0.0084	0.0061	0.0007	0.0000

Appendix No. 5

AMOUNT	PURCH 3 $120,693	PURCH 4 $48,929	STORE 1 $377,425	STORE 2 $434,039	STORE 3 $66,049	STORE 4 $28,307	STORE 5 $99,074	STORE 6 $75,485	STORE 7 $240,609	ENG 1 $126,247	ENG 2 $196,860
DEPARTMENT											
ADMIN 2	0.0000	0.0000	0.0076	0.0087	0.0013	0.0006	0.0020	0.0015	0.0048	0.0019	0.0029
ADMIN 5	0.0047	0.0019	0.0146	0.0167	0.0025	0.0011	0.0038	0.0029	0.0093	0.0049	0.0076
C/S 1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
C/S 2	0.0297	0.0121	0.0179	0.0205	0.0031	0.0013	0.0047	0.0036	0.0114	0.0052	0.0081
CAFE	0.0054	0.0022	0.0140	0.0161	0.0024	0.0010	0.0037	0.0028	0.0089	0.0073	0.0114
PURCH 1	0.0000	0.0000	0.0190	0.0219	0.0033	0.0014	0.0050	0.0038	0.0121	0.0092	0.0143
PURCH 2	0.0000	0.0000	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417
P/T 1	0.0054	0.0022	0.0140	0.0161	0.0025	0.0011	0.0037	0.0028	0.0089	0.0073	0.0114
P/T 2	0.0000	0.0000	0.0110	0.0126	0.0019	0.0008	0.0029	0.0022	0.0070	0.0117	0.0182
ENG 7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENG 8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MAINT 1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MAINT 2	0.0001	0.0000	0.0034	0.0039	0.0006	0.0003	0.0009	0.0007	0.0021	0.0077	0.0120
MAINT 3	0.0000	0.0000	0.0190	0.0219	0.0033	0.0014	0.0050	0.0038	0.0121	0.0092	0.0143
QA 1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
QA 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SYS 1	0.0170	0.0069	0.0102	0.0117	0.0018	0.0008	0.0027	0.0020	0.0065	0.0591	0.0921

AMOUNT	ENG 3 $72,753	ENG 4 $62,054	ENG 5 $119,828	ENG 6 $49,215	HF MAN $1,321,707	HF ASS $1,487,891	RF MAN $2,993,008	RF ASS $4,388,711	PLAS $3,951,578	NO.2 P $1,803,448	TOTALS $26,061,461
DEPARTMENT											
ADMIN 2	0.0011	0.0009	0.0018	0.0007	0.1165	0.0091	0.2552	0.0392	0.3809	0.1066	2.00000
ADMIN 5	0.0028	0.0024	0.0046	0.0019	0.0510	0.0574	0.1154	0.1692	0.1524	0.0932	2.00000
C/S 1	0.0000	0.0000	0.0000	0.0000	0.1290	0.0645	0.3226	0.0968	0.3226	0.0645	2.00000
C/S 2	0.0030	0.0025	0.0049	0.0020	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	2.00000
CAFE	0.0042	0.0036	0.0069	0.0028	0.0685	0.1476	0.2031	0.1077	0.1077	0.0179	2.00000
PURCH 1	0.0053	0.0045	0.0087	0.0036	0.0667	0.0444	0.0889	0.1444	0.1778	0.1336	2.00000
PURCH 2	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0409	2.00000
P/T 1	0.0042	0.0036	0.0069	0.0028	0.0686	0.1479	0.2034	0.1078	0.1078	0.0179	2.00000
P/T 2	0.0067	0.0057	0.0111	0.0045	0.1699	0.0641	0.2276	0.1538	0.0708	0.0000	2.00000
ENG 7	0.0000	0.0000	0.0000	0.0000	0.1290	0.0645	0.3226	0.0968	0.3226	0.0645	2.00000
ENG 8	0.0000	0.0000	0.0000	0.0000	0.1290	0.0645	0.3226	0.0968	0.3226	0.0645	2.00000
MAINT 1	0.0000	0.0000	0.0000	0.0000	0.1290	0.0645	0.3226	0.0968	0.3226	0.0645	2.00000
MAINT 2	0.0044	0.0038	0.0073	0.0030	0.0255	0.0211	0.3078	0.2657	0.1494	0.0093	2.00000
MAINT 3	0.0053	0.0045	0.0087	0.0036	0.0667	0.0444	0.0889	0.1444	0.1778	0.1336	2.00000
QA 1	0.0000	0.0000	0.0000	0.0000	0.1290	0.0645	0.3226	0.0968	0.3226	0.0645	3.00000
QA 2	0.0000	0.0000	0.0000	0.0000	0.1290	0.0645	0.3226	0.0968	0.3226	0.0645	3.00000
SYS 1	0.0341	0.0290	0.0561	0.0231	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.00000

Reconciliation

Total Expenditure: $26,061,461
Capital Expenditure: $1,315,738
Total Budget: $27,377,199

Appendix No. 6

RESTATED MATRIX 1 ABOVE WITH TERMS MOVED:

Eg 146,206 = A2 - 0.0056 A5 - 0.0033 C/S1 ......

AMOUNT DEPARTMENT	ADMIN 2 $146,206	ADMIN 5 $1,446,783	C/S 1 $381,011	C/S 2 $190,505	CAFE $323,884	PURCH 1 $43,493	PURCH 2 $40,593	P/T 1 $328,222	P/T 2 $82,055	ENG 7 $496,858	ENG 8 $402,279
	1	2	3	4	5	6	7	8	9	10	11
ADMIN 2 Asset Value	1.0000	-0.0056	0.0000	-0.0033	-0.0013	-0.0047	0.0000	-0.0013	-0.0020	0.0000	0.0000
ADMIN 5 Dept. Op. Costs	0.0000	1.0000	0.0000	-0.0326	-0.0128	-0.0464	0.0000	-0.0128	-0.0201	0.0000	0.0000
C/S 1 Complexity	0.0000	-0.0147	1.0000	-0.0625	-0.0141	0.0000	0.0000	-0.0142	0.0000	0.0000	0.0000
C/S 2 Manager's Judgement	-0.0021	-0.0073	0.0000	1.0000	-0.0071	0.0000	0.0000	-0.0071	0.0000	0.0000	0.0000
CAFE Staff per Dept.	-0.0050	-0.0125	0.0000	-0.0625	1.0000	0.0000	0.0000	-0.0131	-0.0128	0.0000	0.0000
PURCH 1 MER's	0.0000	-0.0017	0.0000	-0.0107	-0.0020	1.0000	0.0000	-0.0020	0.0000	0.0000	0.0000
PURCH 2 Manager's Judgement	0.0000	-0.0016	0.0000	-0.0100	-0.0018	0.0000	1.0000	-0.0018	0.0000	0.0000	0.0000
P/T 1 Staff per Dept.	-0.0034	-0.0127	0.0000	-0.0500	-0.0117	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000
P/T 2 Staff Turnover	-0.0008	-0.0032	0.0000	-0.0125	-0.0029	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000
ENG 10 Complexity	-0.0074	-0.0192	0.0000	-0.0203	-0.0287	-0.0362	-0.0417	-0.0287	-0.0459	1.0000	0.0000
ENG 11 Complexity	-0.0060	-0.0155	0.0000	-0.0165	-0.0232	-0.0293	-0.0417	-0.0233	-0.0372	0.0000	1.0000
MAINT 1 Complexity	-0.0127	-0.0577	0.0000	-0.0467	-0.0719	0.0000	-0.0417	-0.0721	-0.0240	0.0000	0.0000
MAINT 2 Dept. Maint Charge	-0.0036	-0.0162	0.0000	-0.0132	-0.0203	0.0000	-0.0417	-0.0203	-0.0067	0.0000	0.0000
MAINT 3 MER's	-0.0007	-0.0032	0.0000	-0.0026	-0.0041	0.0000	-0.0417	-0.0041	-0.0013	0.0000	0.0000
QA 1 Complexity	-0.0124	-0.0197	0.0000	-0.0517	-0.0243	-0.0184	0.0000	-0.0243	-0.0159	0.0000	0.0000
QA 2 Complexity	-0.0026	-0.0041	0.0000	-0.0108	-0.0051	-0.0038	0.0000	-0.0051	-0.0033	0.0000	0.0000
SYS 1 Staff Allocated	0.0000	-0.0037	0.0000	-0.0188	-0.0039	-0.0167	0.0000	-0.0039	-0.0096	0.0000	0.0000

AMOUNT DEPARTMENT	MAINT 1 $1,495,596	MAINT 2 $421,295	MAINT 3 $84,259	QA 1 $511,787	QA 2 $106,546	SYS 1 $95,683
	12	13	14	15	16	17
ADMIN 2	0.0000	-0.0003	-0.0047	0.0000	0.0000	-0.0019
ADMIN 5	0.0000	-0.0027	-0.0464	0.0000	0.0000	-0.0186
C/S 1	0.0000	-0.0027	0.0000	0.0000	0.0000	0.0000
C/S 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CAFE	0.0000	-0.0007	0.0000	0.0000	0.0000	0.0000
PURCH 1	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0061
PURCH 2	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0057
P/T 1	0.0000	-0.0400	0.0000	0.0000	0.0000	-0.0571
P/T 2	0.0000	-0.0100	0.0000	0.0000	0.0000	-0.0143
ENG 10	0.0000	-0.0302	-0.0362	0.0000	0.0000	-0.2326
ENG 11	0.0000	-0.0244	-0.0293	0.0000	0.0000	-0.1883
MAINT 1	1.0000	0.0000	0.0000	0.0000	0.0000	-0.0267
MAINT 2	0.0000	1.0000	0.0000	0.0000	0.0000	-0.0075
MAINT 3	0.0000	0.0000	1.0000	0.0000	0.0000	-0.0015
QA 1	0.0000	-0.0078	-0.0184	1.0000	0.0000	-0.0591
QA 2	0.0000	-0.0016	-0.0038	0.0000	1.0000	-0.0123
SYS 1	0.0000	-0.0146	-0.0167	0.0000	0.0000	1.0000

Appendix No. 7

INVERSE MATRIX

DEPARTMENT	ADMIN 2	ADMIN 5	C/S 1	C/S 2	CAFE	PURCH 1	PURCH 2	P/T 1	P/T 2	ENG 7	ENG 8
Column No.	1	2	3	4	5	6	7	8	9	10	11
ADMIN 2	1.0000270881	0.0057116147	0	0.0037937898	0.0014715728	0.0050012772	0.0002264168	0.0014674067	0.0021638355	0	0
ADMIN 5	0.0002524952	1.0010397739	0	0.0355051478	0.0137294107	0.0467849602	0.0021076901	0.0136894292	0.0205760261	0	0
C/S 1	0.0002757335	0.0156193076	1	0.0647909391	0.0150171101	0.0007459886	0.0001720971	0.0151351814	0.0005418135	0	0
C/S 2	0.0021653433	0.0075144511	0	1.0010978018	0.0073043236	0.0003683768	0.0000291015	0.0073136947	0.0002570309	0	0
CAFE	0.0052015263	0.0132547552	0	0.0639084575	1.0008676660	0.0006602932	0.0000875179	0.0137797888	0.0131103973	0	0
PURCH 1	0.0000424088	0.0018634362	0	0.0111282672	0.0021579537	1.0001912525	0.0000157182	0.0021605765	0.0001267778	0	0
PURCH 2	0.0000390191	0.0017508536	0	0.0103925381	0.0019467860	0.0001790903	1.0000145834	0.0019491426	0.0001177092	0	0
P/T 1	0.0037341292	0.0141912120	0	0.0530841197	0.0133589031	0.0016416636	0.0017772531	1.0018089827	0.0012954935	0	0
P/T 2	0.0008834111	0.0035723201	0	0.0132706309	0.0033150885	0.0004117418	0.0004443856	0.0004522843	1.0003241987	0	0
ENG 10	0.0079274381	0.0221505342	0	0.0311359118	0.0317022942	0.0412124630	0.0448986127	0.0316047689	0.0493274236	1	0
ENG 11	0.0064273458	0.0179027874	0	0.0253542625	0.0256457966	0.0333573356	0.0442873351	0.0256655450	0.0399740214	0	1
MAINT 1	0.0134861945	0.0604338385	0	0.0585571166	0.0743608691	0.0034149917	0.0420069829	0.0745853841	0.0265391111	0	0
MAINT 2	0.0038228649	0.0170231198	0	0.0168507808	0.0210507541	0.0009645914	0.0417867361	0.0210586206	0.0074180958	0	0
MAINT 3	0.0007460995	0.0034235310	0	0.0036794601	0.0043146613	0.0001969822	0.0417178005	0.0043164835	0.0014472326	0	0
QA 1	0.0128018666	0.0213891081	0	0.0571447848	0.0259193779	0.0204794656	0.0012704676	0.0259054518	0.0173711122	0	0
QA 2	0.0026839850	0.0044525363	0	0.0119373336	0.0054372434	0.0042329539	0.0002622886	0.0054344293	0.0036066143	0	0
SYS 1	0.0001539544	0.0043232823	0	0.0200289873	0.0045908623	0.0169135267	0.0013269204	0.0045689092	0.0098748489	0	0

DEPARTMENT	MAINT 1	MAINT 2	MAINT 3	QA 1	QA 2	SYS 1	CONSTANT	RECIPROCAL
	12	13	14	15	16	17		
ADMIN 2	0	0.0004283818	0.0050012772	0	0	0.0021635324	$146,206	$157,368
ADMIN 5	0	0.0037591670	0.0467849602	0	0	0.0200914964	$1,446,783	$1,475,285
C/S 1	0	0.0033810395	0.0007459886	0	0	0.0011950181	$381,011	$427,509
C/S 2	0	0.0003295006	0.0003683768	0	0	0.0005706072	$190,505	$206,932
CAFE	0	0.0014384578	0.0006602932	0	0	0.0012470315	$323,884	$362,689
PURCH 1	0	0.0001856831	0.0001912525	0	0	0.0062628581	$43,493	$50,436
PURCH 2	0	0.0001706304	0.0001790903	0	0	0.0058483432	$40,593	$47,047
P/T 1	0	0.0409783151	0.0016416636	0	0	0.0578228142	$328,222	$387,518
P/T 2	0	0.0102449880	0.0004117418	0	0	0.0144810848	$82,055	$96,902
ENG 10	0	0.0354928785	0.0412124630	0	0	0.2363724099	$496,858	$605,342
ENG 11	0	0.0286890703	0.0333573356	0	0	0.1914034565	$402,279	$490,420
MAINT 1	1	0.0039467084	0.0034149917	0	0	0.0327830219	$1,495,596	$1,653,841
MAINT 2	0	1.0011154106	0.0009645914	0	0	0.0093863003	$421,295	$467,219
MAINT 3	0	0.0002298891	1.0001969822	0	0	0.0020732746	$84,259	$94,969
QA 1	0	0.0099873823	0.0204794656	1	0	0.0614875601	$511,787	$586,572
QA 2	0	0.0020569402	0.0042329539	0	1	0.0127988898	$106,546	$122,138
SYS 1	0	0.0149071059	0.0169135267	0	0	1.0007307102	$95,683	$118,138

This is the inverse of the adjusted matrix. It is multiplied by the matrix of constants below to produce the reciprocal indirect department values.

Appendix No. 8

RECIPROCAL ALLOCATIONS TO DETERMINE

DIRECT DEPARTMENT FINAL COSTS

AMOUNT	ADMIN 2 $146,206	ADMIN 5 $1,446,783	C/S 1 $381,011	C/S 2 $190,505	CAFE $323,884	PURCH 1 $43,493	PURCH 2 $40,593	P/T 1 $328,222	P/T 2 $82,055	ENG 7 $496,858	ENG 8 $402,279
DEPARTMENT											
ADMIN 2	-1.0000	0.0000	0.0000	0.0021	0.0050	0.0000	0.0000	0.0034	0.0008	0.0074	0.0060
ADMIN 5	0.0056	-1.0000	0.0147	0.0073	0.0125	0.0017	0.0016	0.0127	0.0032	0.0192	0.0155
C/S 1	0.0000	0.0000	-1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
C/S 2	0.0033	0.0326	0.0625	-1.0000	0.0625	0.0107	0.0100	0.0500	0.0125	0.0203	0.0165
CAFE	0.0013	0.0128	0.0141	0.0071	-1.0000	0.0020	0.0018	0.0117	0.0029	0.0287	0.0232
PURCH 1	0.0047	0.0464	0.0000	0.0000	0.0000	-1.0000	0.0000	0.0000	0.0000	0.0362	0.0293
PURCH 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-1.0000	0.0000	0.0000	0.0417	0.0417
P/T 1	0.0013	0.0128	0.0142	0.0071	0.0131	0.0020	0.0018	-1.0000	0.0000	0.0287	0.0233
P/T 2	0.0020	0.0201	0.0000	0.0000	0.0128	0.0000	0.0000	0.0000	-1.0000	0.0459	0.0372
ENG 7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-1.0000	0.0000
ENG 8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-1.0000
MAINT 1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MAINT 2	0.0003	0.0027	0.0027	0.0000	0.0007	0.0000	0.0000	0.0400	0.0100	0.0302	0.0244
MAINT 3	0.0047	0.0464	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0362	0.0293
QA 1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
QA 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SYS 1	0.0019	0.0186	0.0000	0.0000	0.0000	0.0061	0.0057	0.0571	0.0143	0.2326	0.1883

AMOUNT	RECIPROCAL	ADMIN 2 $146,206	ADMIN 5 $1,446,783	C/S 1 $381,011	C/S 2 $190,505	CAFE $323,884	PURCH 1 $43,493	PURCH 2 $40,593	P/T 1 $328,222	P/T 2 $82,055	ENG 7 $496,858	ENG 8 $402,279
COST POOL												
ADMIN 2	157368	-157368.0000	0.0000	0.0000	330.4728	786.8400	0.0000	0.0000	535.0512	125.8944	1164.5232	944.2080
ADMIN 5	1475285	8261.5960	-1475285.0000	21686.6895	10769.5805	18441.0625	2507.9845	2360.4560	18736.1195	4720.9120	28325.4720	22866.9175
C/S 1	427509	0.0000	0.0000	-427509.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
C/S 2	206932	682.8756	6745.9832	12933.2500	-206932.0000	12933.2500	2214.1724	2069.3200	10346.6000	2586.6500	4200.7196	3414.3780
CAFE	362689	471.4957	4642.4192	5113.9149	2575.0919	-362689.0000	725.3780	652.8402	4243.4613	1051.7981	10409.1743	8414.3848
PURCH 1	50436	237.0492	2340.2304	0.0000	0.0000	0.0000	-50436.0000	0.0000	0.0000	0.0000	1825.7832	1477.7748
PURCH 2	47047	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-47047.0000	0.0000	0.0000	1961.8599	1961.8599
P/T 1	387518	503.7734	4960.2304	5502.7556	2751.8548	5076.4858	775.0360	697.5324	-387518.0000	0.0000	11121.7666	9029.1694
P/T 2	96902	193.8040	1947.7302	0.0000	0.0000	1240.3456	0.0000	0.0000	0.0000	-96902.0000	4447.8018	3604.7544
ENG 7	605342	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-605342.0000	0.0000
ENG 8	490420	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-490420.0000
MAINT 1	1653841	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MAINT 2	467219	140.1657	1261.4913	1261.4913	0.0000	327.0161	0.0000	0.0000	18688.7600	4672.1900	14110.0138	11400.1436
MAINT 3	94969	446.3543	4406.5616	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3437.8778	2782.5917
QA 1	586572	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
QA 2	122138	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SYS 1	118138	224.8861	2197.3537	-0.1013	0.0000	0.0000	720.4291	673.8514	6746.0080	1689.5555	27479.0078	22244.8179
		$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000

Appendix No. 8

AMOUNT	MAINT 1 $1,495,596	MAINT 2 $421,295	MAINT 3 $84,259	QA 1 $511,787	QA 2 $106,546	SYS 1 $95,683	ADMIN1 $654,653	ADMIN 3 $471,350	ADMIN 4 $52,372	SYS 2 $222,121	PURCH 3 $120,693
COST POOL											
ADMIN 2	0.0127	0.0036	0.0007	0.0124	0.0026	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ADMIN 5	0.0577	0.0162	0.0032	0.0197	0.0041	0.0037	0.0523	0.0182	0.0020	0.0086	0.0047
C/S 1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
C/S 2	0.0467	0.0132	0.0026	0.0517	0.0108	0.0188	0.0148	0.0106	0.0012	0.0437	0.0297
CAFE	0.0719	0.0203	0.0041	0.0243	0.0051	0.0039	0.0058	0.0042	0.0005	0.0091	0.0054
PURCH 1	0.0000	0.0000	0.0000	0.0184	0.0038	0.0167	0.0210	0.0151	0.0017	0.0388	0.0000
PURCH 2	0.0417	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
P/T 1	0.0721	0.0203	0.0041	0.0243	0.0051	0.0039	0.0058	0.0042	0.0005	0.0091	0.0054
P/T 2	0.0240	0.0067	0.0013	0.0159	0.0033	0.0096	0.0091	0.0065	0.0007	0.0224	0.0000
ENG 7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENG 8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MAINT 1	-1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MAINT 2	0.0000	-1.0000	0.0000	0.0078	0.0016	0.0146	0.0012	0.0009	0.0001	0.0338	0.0001
MAINT 3	0.0000	0.0000	-1.0000	0.0184	0.0038	0.0167	0.0210	0.0151	0.0017	0.0388	0.0000
QA 1	0.0000	0.0000	0.0000	-1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
QA 2	0.0000	0.0000	0.0000	0.0000	-1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SYS 1	0.0267	0.0075	0.0015	0.0591	0.0123	-1.0000	0.0084	0.0061	0.0007	0.0000	0.0170

AMOUNT	RECIPROCAL	MAINT 1 $1,495,596	MAINT 2 $421,295	MAINT 3 $84,259	QA 1 $511,787	QA 2 $106,546	SYS 1 $95,683	ADMIN1 $654,653	ADMIN 3 $471,350	ADMIN 4 $52,372	SYS 2 $222,121	PURCH 3 $120,693
COST POOL												
ADMIN 2	157368	1998.5736	566.5248	110.1576	1951.3632	409.1568	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ADMIN 5	1475285	85123.9445	23899.6170	4720.9120	29063.1145	6048.6685	5458.5545	77157.4055	26850.1870	2950.5700	12687.4510	6933.8395
C/S 1	427509	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
C/S 2	206932	9663.7244	2731.5024	538.0232	10698.3844	2234.8656	3890.3216	3062.5936	2193.4792	248.3184	9042.9284	6145.8804
CAFE	362689	26077.3391	7362.5867	1487.0249	8813.3427	1849.7139	1414.4871	2103.5962	1523.2938	181.3445	3300.4699	1958.5206
PURCH 1	50436	0.0000	0.0000	0.0000	928.0224	191.6568	842.2812	1059.1560	761.5836	85.7412	1956.9168	0.0000
PURCH 2	47047	1961.8599	1961.8599	1961.8599	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
P/T 1	387518	27940.0478	7866.6154	1588.8238	9416.6874	1976.3418	1511.3202	2247.6044	1627.5756	193.7590	3526.4138	2092.5972
P/T 2	96902	2325.6480	649.2434	125.9726	1540.7418	319.7766	930.2592	881.8082	629.8630	67.8314	2170.6048	0.0000
ENG 7	605342	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENG 8	490420	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MAINT 1	1653841	-1653841.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MAINT 2	467219	0.0000	-467219.0000	0.0000	3644.3082	747.5504	6821.3974	560.6628	420.4971	46.7219	15792.0022	46.7219
MAINT 3	94969	0.0000	0.0000	-94969.0000	1747.4296	360.8822	1586.3788	1994.3490	1434.0319	161.4473	3684.7972	0.0000
QA 1	586572	0.0000	0.0000	0.0000	-586572.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
QA 2	122138	0.0000	0.0000	0.0000	0.0000	-122138.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SYS 1	118138	3153.8627	886.0504	177.2260	6981.9558	1453.0974	-118138.0000	992.3592	720.6418	82.6966	0.0000	2008.3460
		$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$744,713	$507,511	$56,390	$274,283	$139,879

Appendix No. 8

AMOUNT	PURCH 4	STORE 1	STORE 2	STORE 3	STORE 4	STORE 5	STORE 6	STORE 7	ENG 1	ENG 2	ENG 3
	$48,929	$377,425	$434,039	$66,049	$28,307	$99,074	$75,485	$240,609	$126,247	$196,860	$72,753
COST POOL											
ADMIN 2	0.0000	0.0076	0.0087	0.0013	0.0006	0.0020	0.0015	0.0048	0.0019	0.0029	0.0011
ADMIN 5	0.0019	0.0146	0.0167	0.0025	0.0011	0.0038	0.0029	0.0093	0.0049	0.0076	0.0028
C/S 1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
C/S 2	0.0121	0.0179	0.0205	0.0031	0.0013	0.0047	0.0036	0.0114	0.0052	0.0081	0.0030
CAFE	0.0022	0.0140	0.0161	0.0024	0.0010	0.0037	0.0028	0.0089	0.0073	0.0114	0.0042
PURCH 1	0.0000	0.0190	0.0219	0.0033	0.0014	0.0050	0.0038	0.0121	0.0092	0.0143	0.0053
PURCH 2	0.0000	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417
P/T 1	0.0022	0.0140	0.0161	0.0025	0.0011	0.0037	0.0028	0.0089	0.0073	0.0114	0.0042
P/T 2	0.0000	0.0110	0.0126	0.0019	0.0008	0.0029	0.0022	0.0070	0.0117	0.0182	0.0067
ENG 7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENG 8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MAINT 1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MAINT 2	0.0000	0.0034	0.0039	0.0006	0.0003	0.0009	0.0007	0.0021	0.0077	0.0120	0.0044
MAINT 3	0.0000	0.0190	0.0219	0.0033	0.0014	0.0050	0.0038	0.0121	0.0092	0.0143	0.0053
QA 1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
QA 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SYS 1	0.0069	0.0102	0.0117	0.0018	0.0008	0.0027	0.0020	0.0065	0.0591	0.0921	0.0341

AMOUNT	RECIPROCAL	PURCH 4	STORE 1	STORE 2	STORE 3	STORE 4	STORE 5	STORE 6	STORE 7	ENG 1	ENG 2	ENG 3
		$48,929	$377,425	$434,039	$66,049	$28,307	$99,074	$75,485	$240,609	$126,247	$196,860	$72,753
COST POOL												
ADMIN 2	157368	0.0000	1195.9968	1369.1016	204.5784	94.4208	314.7360	236.0520	755.3664	298.9992	456.3672	173.1048
ADMIN 5	1475285	2803.0415	21539.1610	24637.2595	3688.2125	1622.8135	5606.0830	4278.3265	13720.1505	7228.8965	11212.1660	4130.7980
C/S 1	427509	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
C/S 2	206932	2503.8772	3704.0828	4242.1060	641.4892	269.0116	972.5804	744.9552	2359.0248	1076.0464	1676.1492	620.7960
CAFE	362689	797.9158	5077.6460	5839.2929	870.4536	362.6890	1341.9493	1015.5292	3227.9321	2647.6297	4134.6546	1523.2938
PURCH 1	50436	0.0000	958.2840	1104.5484	166.4388	70.6104	252.1800	191.6568	610.2756	464.0112	721.2348	267.3108
PURCH 2	47047	0.0000	1961.8599	1961.8599	1961.8599	1961.8599	1961.8599	1961.8599	1961.8599	1961.8599	1961.8599	1961.8599
P/T 1	387518	852.5396	5425.2520	6239.0398	968.7950	426.2698	1433.8166	1085.0504	3448.9102	2828.8814	4417.7052	1627.5756
P/T 2	96902	0.0000	1065.9220	1220.9652	184.1138	77.5216	281.0158	213.1844	678.3140	1133.7534	1763.6164	649.2434
ENG 7	605342	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENG 8	490420	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MAINT 1	1653841	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MAINT 2	467219	0.0000	1588.5446	1822.1541	280.3314	140.1657	420.4971	327.0533	981.1599	3597.5863	5606.6280	2055.7636
MAINT 3	94969	0.0000	1804.4110	2079.8211	313.3977	132.9566	474.8450	360.8822	1149.1249	873.7148	1358.0567	503.3357
QA 1	586572	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
QA 2	122138	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SYS 1	118138	815.1522	1205.0076	1382.2146	212.6484	94.5104	318.9726	236.2760	767.8970	6981.9558	10880.5098	4028.5058
		$56,702	$422,951	$485,937	$75,541	$33,560	$112,453	$86,136	$270,269	$155,340	$241,049	$90,295

Appendix No. 8

	ENG 4	ENG 5	ENG 6	HF MAN	HF ASS	RF MAN	RF ASS	PLAS	NO.2 P	CAPITAL	TOTALS
AMOUNT	$62,054	$119,828	$49,215	$1,321,707	$1,487,891	$2,993,008	$4,388,711	$3,951,578	$1,803,448	$1,315,738	$27,377,199
COST POOL											
ADMIN 2	0.0009	0.0018	0.0007	0.1165	0.0091	0.2552	0.0392	0.3809	0.1066		.00000
ADMIN 5	0.0024	0.0046	0.0019	0.0510	0.0574	0.1154	0.1692	0.1524	0.0932		.00000
C/S 1	0.0000	0.0000	0.0000	0.1290	0.0645	0.3226	0.0968	0.3226	0.0645		.00000
C/S 2	0.0025	0.0049	0.0020	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625		.00000
CAFE	0.0036	0.0069	0.0028	0.0685	0.1476	0.2031	0.1077	0.1077	0.0179		.00000
PURCH 1	0.0045	0.0087	0.0036	0.0667	0.0444	0.0889	0.1444	0.1778	0.1336		.00000
PURCH 2	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0409		.00000
P/T 1	0.0036	0.0069	0.0028	0.0686	0.1479	0.2034	0.1078	0.1078	0.0179		.00000
P/T 2	0.0057	0.0111	0.0045	0.1699	0.0641	0.2276	0.1538	0.0708	0.0000		.00000
ENG 7	0.0000	0.0000	0.0000	0.1290	0.0645	0.3226	0.0968	0.3226	0.0645		.00000
ENG 8	0.0000	0.0000	0.0000	0.1290	0.0645	0.3226	0.0968	0.3226	0.0645		.00000
MAINT 1	0.0000	0.0000	0.0000	0.1290	0.0645	0.3226	0.0968	0.3226	0.0645		.00000
MAINT 2	0.0038	0.0073	0.0030	0.0255	0.0211	0.3078	0.2657	0.1494	0.0093		.00000
MAINT 3	0.0045	0.0087	0.0036	0.0667	0.0444	0.0889	0.1444	0.1778	0.1336		.00000
QA 1	0.0000	0.0000	0.0000	0.1290	0.0645	0.3226	0.0968	0.3226	0.0645		.00000
QA 2	0.0000	0.0000	0.0000	0.1290	0.0645	0.3226	0.0968	0.3226	0.0645		.00000
SYS 1	0.0290	0.0561	0.0231	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		.00000

	RECIPROCAL	ENG 4	ENG 5	ENG 6	HF MAN	HF ASS	RF MAN	RF ASS	PLAS	NO.2 P	CAPITAL	TOTALS
AMOUNT		$62,054	$119,828	$49,215	$1,321,707	$1,487,891	$2,993,008	$4,388,711	$3,951,578	$1,803,448	$1,315,738	$27,377,199
COST POOL												
ADMIN 2	157368	141.6312	283.2624	110.1576	18333.3720	1432.0488	40160.3136	6168.8256	59941.4712	16775.4288		.00000
ADMIN 5	1475285	3540.6840	6786.3110	2803.0415	75239.5350	84681.3590	170247.8890	249618.2220	224833.4340	137496.5620		.00000
C/S 1	427509	0.0000	0.0000	0.0000	55161.4863	27582.8807	137905.8532	41370.0459	137905.8532	27582.8807		.00000
C/S 2	206932	517.3300	1013.9668	413.8640	12933.2500	12933.2500	12933.2500	12933.2500	12933.2500	12933.2500		.00000
CAFE	362689	1305.6804	2502.5541	1015.5292	24844.1965	53532.8964	73662.1359	39061.6053	39061.6053	6492.1331		.00000
PURCH 1	50436	226.9620	438.7932	181.5696	3364.0812	2239.3584	4483.7604	7282.9584	8967.5208	6738.2496		.00000
PURCH 2	47047	1961.8599	1961.8599	1961.8599	1961.8599	1961.8599	1961.8599	1961.8599	1961.8599	1924.2223		.00000
P/T 1	387518	1395.0648	2673.8742	1085.0504	26583.7348	57313.9122	78821.1612	41774.4404	41774.4404	6936.0952		.00000
P/T 2	96902	552.3414	1075.6122	436.0590	16463.6498	6211.4182	22054.8952	14903.5276	6860.6616	0.0000		.00000
ENG 7	605342	0.0000	0.0000	0.0000	78107.2783	39056.6658	195271.2224	58578.9453	195271.2224	39056.6658		.00000
ENG 8	490420	0.0000	0.0000	0.0000	63278.8926	31641.8984	158199.6836	47457.9434	158199.6836	31641.8984		.00000
MAINT 1	1653841	0.0000	0.0000	0.0000	213395.1042	106705.8213	533496.0298	160042.1936	533496.0298	106705.8213		.00000
MAINT 2	467219	1775.4322	3410.6987	1401.6570	11914.0845	9858.3209	143810.0082	124140.0883	69802.5186	4345.1739		.00000
MAINT 3	94969	427.3605	826.2303	341.8884	6334.4323	4216.6236	8442.7441	13713.5236	16885.4882	12687.4619		.00000
QA 1	586572	0.0000	0.0000	0.0000	75685.3852	37845.6254	189216.3958	56762.5724	189216.3958	37845.6254		.00000
QA 2	122138	0.0000	0.0000	0.0000	15759.4661	7880.3438	39399.2760	11819.2943	39399.2760	7880.3438		.00000
SYS 1	118138	3426.0020	6627.5418	2728.7619	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		.00000
		$77,324	$147,429	$61,694	$2,021,067	$1,972,985	$4,803,074	$5,276,300	$5,688,089	$2,260,490	$1,315,738	$27,377,199

CHAPTER 9

THE PROBLEMS AND PITFALLS WITH AN ACTIVITY-BASED COSTING IMPLEMENTATION

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CHAPTER 9

THE PROBLEMS AND PITFALLS WITH AN ACTIVITY-BASED COSTING IMPLEMENTATION

I. Introduction

Because Activity-based costing (ABC) is so new, it is important, for two reasons, to identify the areas which cause implementation difficulties. Firstly, it is important to assist future users of the model to avoid or minimise the same difficulties and secondly, it helps to evaluate the model. The ABC analysis generates problems of variable definition and data collection. Existing systems are not set up with the ABC analysis in mind so decisions must be made to accept data which may not be particularly appropriate or accurate. The purpose of this chapter is to identify some of the situations where these problems occurred, some of the issues arising from the problems and suggest some possible solutions.

II. Data Gathering

The major problem was data gathering. Data was seldom in the form in which I wanted it. Even worse, it was difficult to determine what should be asked for because managers were unfamiliar with the model and I was unfamiliar with the firm. There are three areas where data gathering problems were most prominent and each has differing characteristics. The areas are:

A. Activities

B. Joint Costs

C. Products

A. Activities

Activities tended to have a joint element about them and it was seldom that each existed in isolation. By definition, many activities are indirect in terms of their effect on products because they are seldom driven by production volume. It was difficult to define many of the activities carried out in the division.

This problem can be illustrated by an example. The receipt of goods into the store was categorised as "inwards goods movements". However, this activity had several lower level activities such as forklift movement, documentation, checking and so on. Individual components received into the store required one "unit" of the "inwards goods movements" activity but may have required differing amounts of the lower level activities. A single receipt of one component could have required a unit of documentation but may have been moved with several other components by forklift.

This jointness creates fuzziness in the cost tracing process depending on the level of detail incorporated in the costing. In general terms, a decision must be made as to how many levels of activity should be used. In the aforementioned example, does one use "forklift movement", "documentation" and "checking" as three separate activities or "inwards goods movements" as one activity incorporating the previous three? Only experience can guide this decision.

Determining the level of activity detail required by the model seems to depend on the degree of accuracy desired by those implementing it and the uses to which the information is to be put. If activity information is also to be used for cost control, then the highest level of detail which the system can be generate would seem to be the most satisfactory. On the other hand, if it is only for the purposes of calculating product costs for product mix decisions, then a higher level of aggregation would most likely be acceptable.

B. Joint Costs

The problem of joint costs is one which has bedevilled cost accounting for many years. Most textbooks feature many different ways in which it can be handled but in almost all cases the resulting figures are arbitrary.[1] Under an ABC system, this problem is magnified because of the long term variability assumption which assumes that all costs vary with some cost driver[2] therefore there is no such thing as a joint cost.

Conceptually, the joint cost problem in ABC occurs at the first stage of the costing process. Resource costs have to be traced to the cost pools associated with each activity which demands that resource. However, first stage cost drivers seem to be difficult to define, therefore "number of staff per activity" is frequently used (and was used in the case study). However, this acts more in the nature of an allocation than true cost tracing; especially with resources such as advertising to promote the corporate image, corporate management costs or corporate legal services. It seems likely that traditional joint cost allocation methods may be required for some resources.

In the case study, the problem of joint costs was apparent but less serious than the examples in the previous paragraph. The problem stemmed from the difficulty in dividing some resources into cost pools (because staff were not permanently allocated to one activity or another). The solution adopted, though somewhat crude, appears to be acceptable. It lies in the method by which resource costs are apportioned into cost pools. By applying a long term view to the first stage cost drivers, it is possible to determine what the activity demands "on average".

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1. Thomas A.L., "Goals for Joint-Cost Allocation: An Incompatibility in the Literature", Abacus, Vol. 18, No. 2, 1982. Horngren C.T. and G. Foster, Managerial Accounting, A Management Emphasis, 6th Ed, 1987, Chap. 14.
2. See Chapters 3 and 4.

This can be illustrated by the example in the case study of the Systems department. This department can be viewed as a joint cost though not as completely as, for example, corporate advertising. Two distinct activities were identified in the department: support for products and support for other departments. The problem was that staff moved between both activities rather than being permanently attached to one or the other. In order to determine each activity's share of the Systems "resource", the question was put to the manager, "how many people are working on each activity, in general or on average, over a year".

By this means, a sufficiently accurate calculation was able to be made of the size of each cost pool. These figures were accurate enough to be used for costing the firm's products for decision-making purposes. It is acknowledged that this method is very crude, but when the goal of ABC, to obtain a more accurate product cost, is considered, the method seems appropriate

C. Products

With products, the key problem was that the Division's product mix constantly changes. Products are in a constant state of evolution as new models are developed especially for the export markets.

The solution adopted was to carry out the analysis using the products available at the time the analysis began. If the company had adopted the ABC costings, these costs would have become standard costs. As new models were added, they could have been costed at the same rate as some comparable existing model for which an ABC standard cost exists.

III. The General Ledger

One of the first issues which had to be resolved was the decision over where the figures for resource costs were to come from. The model could not be developed until this question was resolved. The figures could have come from budgets or from the general ledger, and it was decided that the data from the budget would be used.[3] However, as the budget was derived substantially from historical data sourced from the general ledger it probably would not have mattered which was used. The budget follows the general ledger layout.

General ledgers are set up for many purposes but the main purposes are for external and internal reporting. The Refrigeration Division has its general ledger set up for both but mainly with internal reporting of departmental results in mind. However, some policy decisions are hard to understand. For example all depreciation is charged to the administration department.

The general ledger was not set up with analysis of resource consumption in mind though it proved adequate in the event. It would be preferable to identify the resource centres and build the chart of accounts around this structure. In fact because the division is laid out in a functional manner, the ledger was reasonably accurate. However, if the ledger had been laid out to suit external reporting, it may have been less useful for the costing analysis. There seems to be no reason why costs could not be traced directly to activities rather than using the first stage cost drivers for this process.

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3. See Appendix No. 1 of Chapter 8.

To improve the usefulness of the general ledger for an ABC analysis the following suggestions are made:

1. Identify the resource centres.
2. Identify the activities within each resource centre.
3. Structure the general ledger to track costs to the resource centres.
4. Further structure the general ledger, where possible, to charge costs to the activities themselves.
5. Where there are clearly defined first stage cost drivers, apportion costs amongst activities on the basis of those cost drivers as costs are incurred, rather than later during a costing exercise.

It would also be helpful to identify those resource centres which can be classed as Indirect. If second level cost drivers relating to each are known, then these could be used to charge Indirect costs, as they are incurred, to Direct departments, again reducing the amount of work required for a costing analysis.

IV. Cost Drivers

A. First Stage Cost Drivers

The use of staff as a means of dividing up the costs of a resource centre into its activity cost pools is open to criticism. The departmental managers seemed to be able to clearly identify what was happening in their departments. They were able to determine the activities and, even if only on judgemental basis, the level of staff support for each. On this basis, costs could be apportioned into cost pools. However, whether the amounts traced were accurate or not was not known by the managers. In other words, they did not know the cost of the activities carried out in their department. It is the role of the management accounting system to provide that information.

Where first stage cost drivers, other than number of staff, are known, the management accounting system should be routinely gathering data on them. This information can be used to update cost pool information which may have initially used number of staff as a surrogate first stage cost driver. When first stage cost drivers are not known, it is the role of the management accountant to carry out sufficient analysis to find them.

B. The Link Between Second Stage Cost Drivers and Cost Pools

The link between second stage cost drivers and cost pools needs to be developed further. Second stage cost drivers clearly identify the activities and drives the size of the associated cost pools. However, this link does not seem to be made apparent by existing information systems. Managers need to be able to identify both the number of staff involved in an activity and the quantity of the transaction determining their workload. Further research is required in this area.

C. Capturing Second Stage Cost Driver Data

Even with the high level of computerisation at F & P, it was difficult to gather data on second stage cost drivers. It often became necessary to find surrogates because data on the true cost driver were not available.[4] The trustworthiness of the surrogate was difficult to determine but there was seldom any other choice. When considering the difficulty in persuading managers that the costings are accurate, a lack of confidence in cost drivers undermines the costing results.

4. See Chapter 8 for the discussion on the use of Component purchases in place of part number purchases for the "Purchasing 3" cost pool.

The following are some suggestions which may help overcome these problems:

1. Once second stage cost drivers are identified, a means of measuring them and recording the data about them which the ABC system requires, needs to be determined.
2. Any surrogate cost driver which must be used to approximate the real cost driver, must be analysed for its validity as carefully as possible.
3. Once data on the real cost driver is obtained, it must be tested against the surrogate to see if it is dramatically different. If so, an immediate correction should be made, otherwise corrections can wait until the next update of the costings.

Statistical tests need to be derived which will enable the cost drivers to be selected with some certainty. Regression analysis is likely to be an important tool for this process. However, structuring the data so that they can be tested is difficult. Monthly data are unlikely to be adequate because of short term fluctuations. ABC requires both a long term view of costs and identification of a long term relationship between cost drivers and cost pools. However, if annual data are gathered, over time it may be possible to test in this manner with more reliability.

V. Iterative Processing

The key to a successful implementation is that the process must be iterative.[5] It should be possible to refine the initial model after sufficient experience has been gained with it and more data are available.[6] The cost driver and activity analysis should be reviewed at least annually. As managers become more aware of the requirements of the system, they should be able to more clearly identify the

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5. Tait Electronics update their Activity information wherever possible. Their management accountant feeds information back to managers so that they can alter it to increase its accuracy.
6. See Foster and Gupta, 1990a, p. 231.

activities in their areas and the factors which drive them. Systems used to gather cost driver data can be reviewed to improve their efficiency. Where better cost drivers are found systems can be put in place to determine the data required for the activity costing analysis. Similarly, where cost drivers are known to be unsatisfactory, analysis will be needed to find better replacements. The goal should always be to eliminate surrogate cost drivers.

Determination of the correct size of cost pools is problematic using first stage cost drivers, especially number of staff. Review of the general ledger to harmonise with the ABC system could enable accurate tracing of costs directly to those activities which cause them, eliminating much of the necessity for first stage cost tracing.

VI. Inventory Valuation

At present, F & P's product costing system values inventory for external reporting purposes. If F & P were to adopt the ABC model, it is unlikely that it would be accepted by their auditors because, being a full cost system, it incorporates too many costs causing it to be over-valued.

In the Statement of Standard Accounting Practice number 4 (SSAP 4), the cost of inventories is defined as:

> *"... the aggregate of costs of purchase, costs of conversion and other costs incurred in bringing the inventories to their present location and condition".*[7]

However, any expenditure relating to administration, finance, marketing and distribution are to be excluded. As ABC includes these costs, companies would not be following the standard if they used them for external reporting.

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7. Statement of Standard Accounting Practice No. 4: Accounting for Inventories, para 3.2.

Auditors are more concerned that total costs are split between those which should be inventoried and those which should be expensed in the period. They have no need to ensure that product costs have economic validity and are useful for decision-making. Neither does SSAP 4 require an economic link between overheads and product costs, requiring only "... a systematic allocation, based on normal capacity of the facilities".[8] Managers of companies frequently use single plant wide allocation rates because they are simpler to apply to inventory valuation and meet audit requirements.

Kaplan believes that "[t]he current economics of information collection, processing, and reporting have made multiple cost systems possible".[9] He reasons that at the current stage of development of costing systems, no single system is sufficiently sophisticated enough to handle the multitude of tasks demanded of it. Therefore, two systems are required, one for external reporting and one for operational control.

However, many firms still cannot afford two systems and it seems that when only one system can be afforded then inventory valuation for income determination is used as the primary purpose for the costing system.[10] Because it incorporates all of the firm's costs into product costs, ABC would be unacceptable if inventory valuation were the goal of the costing system. However, traditional absorption costing models meet the requirements of SSAP 4 so are more likely to be adopted. However, as they do not need any causal link between overheads and the allocation base they are less useful for operational decision-making.

At F & P, only one system is available but it seems likely that it could be modified to handle the dual tasks of inventory valuation for external reporting, and product

8. SSAP 4, para 5.3.
9. Kaplan, "One Cost System Isn't Enough", p. 66.
10. Kaplan, "One Cost System Isn't Enough", p. 61.

costing for decision-making. The Systems manager believes that the MRP system could be readily modified to accept an ABC calculated figure in place of the existing labour figure. Spreadsheets could be used to calculate the ABC figure for entry into the MRP system as was carried out in this thesis. This type of ad hoc solution will be necessary until Accounting Standards are changed and ABC software is readily available.

VII. Reconciliations

It is extremely important to reconcile the ABC product costs by extending the costs, accumulating them and comparing the total with the resource totals with which the analysis began. If this is not done then analysis of the resulting calculations is questionable. Unfortunately, in the case study it was impossible to reconcile the product costs in the traditional system because the burden rate calculations were not available. This made the results of the comparison between the two systems equivocal.

VIII. Conclusions

Data gathering was the main practical problem in the case study though much of this was a function of distance from the company itself. A researcher positioned in the factory could have spent more time with the staff and may have been able to gather more appropriate data. However, in general terms, the solution to data gathering problems lies in reviewing the costing system regularly and ensuring that managers are aware of its requirements. Less appropriate cost drivers can be used in the short term while systems are put in place to gather the information needed to improve costings in the future.

Most of the problems with the ABC analysis revolve around the fact that the existing system is entrenched in the organization. Other information systems such as the general ledger could be altered to harmonize with the ABC product costing system. More importantly, people within the organization would be able to better support the system once they are aware of its requirements and can see its benefits. This will ultimately solve most of the implementation difficulties.

CHAPTER 10

RESULTS OF THE ABC ANALYSIS

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CHAPTER 10

RESULTS OF THE ABC ANALYSIS

I. Introduction

Fisher and Paykel Ltd. has a traditional absorption product costing system incorporated into their Materials Requirements Planning (MRP) computer system. The goal of the case study was to see if an ABC implementation gives substantially different results from the existing system. Accordingly, an ABC product costing exercise was carried out generating costs for 312 different types of products. These products range from very simple refrigerators and freezers designed for the local market, to large complex refrigerators and freezers custom-tailored for export markets. It was suggested by the management of the company that export products would be more costly to produce than local products and I expected the ABC product costs to reflect that fact.

Traditional absorption costing models distort product costs by systematically over-costing long-run products and under-costing short run products. ABC product costing systems should eliminate this problem. In this chapter, the results of the ABC costing exercise will be analysed to see how effectively problems of this nature were addressed. For each product, the ABC product costs will be compared with the costs generated from the existing traditional product costing system. The analysis will identify whether the results are different between the two systems and, where differences occur, which factors are likely to have caused the differences. Amongst the factors to be analysed are production volume effects, the export/local product distinction and the influence of material costs on total cost. These factors will be assessed to determine the amount of influence they have on the costs which were generated by each costing model.

I. Case Study Results

As the ABC calculation included more overhead areas, it was expected that the ABC product costs would be higher than the Fisher & Paykel product costs and this turned out to be the case. A careful analysis of the output of the ABC model was necessary in order to ensure that this factor did not bias the interpretation of the results.

A. The Data for Testing

For each product, a cost was determined by both the ABC product costing model and the traditional product costing system used at Fisher & Paykel (the latter will hereafter be referred to as the F & P cost). The selling price is normally determined as a percentage on top of the F & P cost. However, owing to the competitive nature of both the export and local markets (despite the Exclusive Dealing Arrangement the company has with its dealers in the local market), it was assumed that this price was market determined. In other words, the market would not allow Fisher & Paykel to charge more than the given price. Accordingly the standard Fisher & Paykel price was used to determine a profit margin under both costing models.

For each product the measures listed in table 1 were determined:

Table 1

PRODUCT ANALYSIS MEASURES

1. Forecast production volume (from the MRP)
2. Material costs (from the MRP)
3. Activity Based other costs
4. Total Activity Based product cost (2 plus 3)
5. F & P other costs

6. Total F & P product cost (2 plus 5)
7. Selling Price
8. ABC margin (7 less 4)
9. F & P margin (7 less 6)
10. Difference between the costs under each costing model.

This information is shown in Appendix No. 1.

From the appendix it can be seen that there are 12 products with a very high ABC product cost yet a low F & P cost. More importantly, these products have high negative profit margins when costed using the ABC model. These products have a strong influence on the analysis which follows. Therefore, where applicable, the results of the analysis will be shown both including and excluding these products in order to highlight their influence. Possible reasons for the results of these particular 12 products will be discussed later in the chapter.

B. Testing the Output of the ABC Model

Using each costing model in turn, the profitability of each product was determined using the data as shown in Appendix No. 1 and the measures in Table 1. This analysis took two forms.

In the first part of the analysis, margins using each model were calculated for each product (these are items 8 and 9 in table 1) and a list of all products, ranked on the ABC margin, was produced. This is shown in Appendix No. 2. Each product has a ranking under both costing models although the listing is in the order of the ABC model. The difference in ranking is captured as an absolute figure and used to determine the mean ranking under each costing model. On average, the F & P model gives a ranking 24 levels different from the ABC model. The difference varies from zero (same ranking) e.g. part number 12894 to 114 e.g. part number 12545 ranked 215th by the ABC model and 101st by the F & P model. This difference may occur as a result of including more overheads in the ABC model.

In the second part of the analysis, the cumulative profit generating capability of the products was estimated. This was calculated by multiplying the margin under each costing model by the forecast volume. The results of this analysis are shown in Appendix No. 3. On average the F & P model gives a ranking 17 levels different from the ABC model based on absolute differences. The difference varies from zero (same ranking) e.g. part number 12958 to 177 for part number 15823 ranked 309th by the ABC model and 132nd by the F & P model.

In fact the largest diversion occurs for products ranked by the ABC model 296th through to 312th. These products all have a negative profit margin under the ABC model yet no product at all has a negative margin under the F & P model. In general, the ABC model shows relatively minor differences from the F & P model, with the exception of these last few products.

C. Statistical Tests

Minitab and Lotus 123 were used to carry out various statistical tests which were looking for relationships between the costing models. In addition, the data was directly examined for patterns using scattergraphs.

The first test carried out was to see if the ABC product cost was statistically different from the traditional product cost. The null hypothesis was that each of the product costing systems produced the same figure. A t score of 5.61 showed that there was a significant difference between the means of the two models at the 95% level of confidence, so the null hypothesis was rejected. (See the Minitab output in table

2). This indicates that each product costing model was producing a different figure for each product.

Table 2

T TEST BETWEEN ABC AND TRADITIONAL PRODUCT COSTS

```
MTB > twosampl 'tot_abc' 'tot_f&p'

TWOSAMPLE T FOR TOT_ABC VS TOT_F&P
             N       MEAN       STDEV    SE MEAN
TOT_ABC    312        476         184         10
TOT_F&P    312        409         102        5.8
95 PCT CI FOR MU TOT_ABC - MU TOT_F&P: (43, 90.1)

TTEST MU TOT_ABC = MU TOT_F&P (VS NE):
   T = 5.61   P=0.0000   DF =  486
```

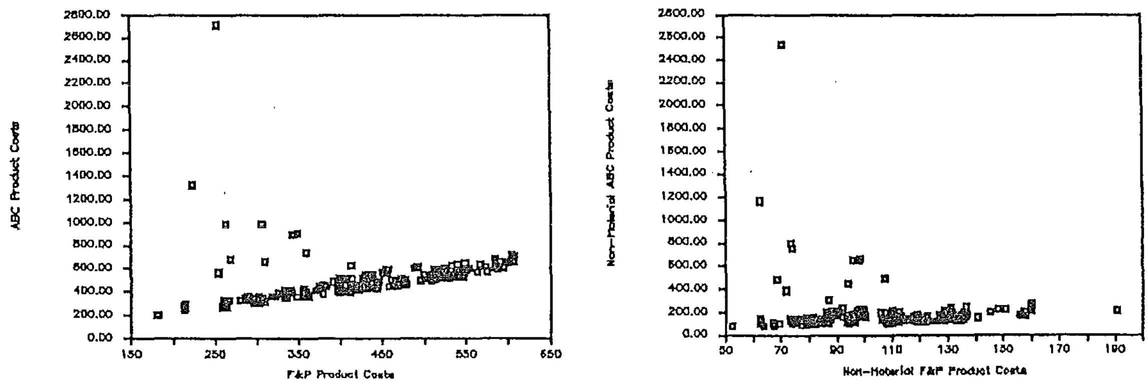
As the products have a high material content, the two models were tested to see if their results are correlated, because of the swamping effect of material costs. In fact this proved to be the case. Firstly, a Pearson's correlation coefficient was calculated using Minitab. This gave a value of 0.378 showing there is little correlation. However, the Pearson's coefficient is highly influenced by outliers so a Spearman Rank Correlation Coefficient was calculated using Lotus 123 in order to eliminate the influence of the twelve products with extremely high ABC product costs. This showed that there was correlation between the two models with a Spearman's value of 0.801.

In order to check the hypothesis that these outliers were affecting the correlation results, the Pearson's coefficient was recalculated with twelve outliers removed. This gave a new coefficient of 0.943. The Spearman's coefficient was also recalculated and it rose to 0.944. Both of these coefficients now show that the costing systems are highly correlated apart from the outliers.

In order to eliminate the swamping effect of the material costs, the same calculations were made for non-material costs under both models. The Pearson's coefficient was -0.049 and the Spearman coefficient was 0.342 indicating that there was little correlation between the two models. Again the twelve outliers were eliminated causing the Pearson's coefficient to rise to 0.471 and the Spearman coefficient to rise to 0.443. While these coefficients are too low to suggest any strong relationship between non material costs for the two models, they do, however, show that a relationship exists. They also illustrate the strong effect of the 12 poor margin products. The most important effect of these two measures is to confirm that materials costs are swamping both product costing models. As soon as material costs are eliminated from the costings, there is a low correlation between the costing models, when all 312 products are considered. This is illustrated in the graphs in figure 1

Figure 1

INFLUENCE OF MATERIAL ON CORRELATIONS BETWEEN THE COSTING MODELS



The Minitab output for the Pearson's coefficients is shown in Appendix No. 4.

D. Analysis of the Error Between the Models

As the analysis seemed to indicate that the models converged, the size of the error between them was calculated using the formula:

$$\text{Error} = \frac{\text{ABC Cost} - \text{F \& P Cost}}{\text{F \& P Cost}}$$

A frequency distribution of these errors was calculated and the results are shown in Table 3. This table shows that for 95% of the products, the error is within 30% of the F & P cost. As the profit margin on a product is normally expected to be 40%, this suggests that some products are either under-priced or are making less margin than anticipated.

Table 3.

FREQUENCY DISTRIBUTION OF DIFFERENCES

Range % Diff	Number Products	Cumulative % Products	Range % Diff	Number Products	Cumulative % Products	Range % Diff	Number Products	Cumulative % Products
-3.00%	4	1.28%	32.00%	0	95.51%	67.00%	0	96.15%
-2.00%	8	3.85%	33.00%	0	95.51%	68.00%	0	96.15%
-1.00%	7	6.09%	34.00%	0	95.51%	69.00%	0	96.15%
.00%	14	10.58%	35.00%	0	95.51%	70.00%	0	96.15%
1.00%	8	13.14%	36.00%	0	95.51%	71.00%	0	96.15%
2.00%	21	19.87%	37.00%	1	95.83%	72.00%	0	96.15%
3.00%	10	23.08%	38.00%	0	95.83%	73.00%	0	96.15%
4.00%	15	27.88%	39.00%	0	95.83%	74.00%	0	96.15%
5.00%	17	33.33%	40.00%	0	95.83%	75.00%	0	96.15%
6.00%	8	35.90%	41.00%	0	95.83%	76.00%	0	96.15%
7.00%	14	40.38%	42.00%	0	95.83%	77.00%	0	96.15%
8.00%	8	42.95%	43.00%	0	95.83%	78.00%	0	96.15%
9.00%	8	45.51%	44.00%	0	95.83%	79.00%	0	96.15%
10.00%	10	48.72%	45.00%	0	95.83%	80.00%	0	96.15%
11.00%	11	52.24%	46.00%	0	95.83%	81.00%	0	96.15%
12.00%	8	54.81%	47.00%	0	95.83%	82.00%	0	96.15%
13.00%	12	58.65%	48.00%	0	95.83%	83.00%	0	96.15%
14.00%	10	61.86%	49.00%	0	95.83%	84.00%	0	96.15%
15.00%	5	63.46%	50.00%	0	95.83%	85.00%	0	96.15%
16.00%	11	66.99%	51.00%	0	95.83%	86.00%	0	96.15%
17.00%	16	72.12%	52.00%	1	96.15%	87.00%	0	96.15%
18.00%	7	74.36%	53.00%	0	96.15%	88.00%	0	96.15%
19.00%	8	76.92%	54.00%	0	96.15%	89.00%	0	96.15%
20.00%	8	79.49%	55.00%	0	96.15%	90.00%	0	96.15%
21.00%	5	81.09%	56.00%	0	96.15%	91.00%	0	96.15%
22.00%	7	83.33%	57.00%	0	96.15%	92.00%	0	96.15%
23.00%	6	85.26%	58.00%	0	96.15%	93.00%	0	96.15%
24.00%	11	88.78%	59.00%	0	96.15%	94.00%	0	96.15%
25.00%	9	91.67%	60.00%	0	96.15%	95.00%	0	96.15%
26.00%	2	92.31%	61.00%	0	96.15%	96.00%	0	96.15%
27.00%	4	93.59%	62.00%	0	96.15%	97.00%	0	96.15%
28.00%	1	93.91%	63.00%	0	96.15%	98.00%	0	96.15%
29.00%	1	94.23%	64.00%	0	96.15%	99.00%	0	96.15%
30.00%	3	95.19%	65.00%	0	96.15%	100.00%	0	96.15%
31.00%	1	95.51%	66.00%	0	96.15%	1000.00%	12	100.00%

E. Material Costs

Materials form the major part of Fisher & Paykel's product costs and it is possible to calculate the minimum material costs directly from the product data. The material cost is known for each model as well as the production volume (see Appendix No. 1). These two factors were multiplied out and the results summed. The total product cost was also multiplied out for each model, giving the results in the first part of table 4. In the second part of the table, the 1989 actual costs are shown. The lower material percentage is probably a result of extra overhead costs in the actual results which are not included in the ABC analysis.

Table 4

MATERIAL COST CALCULATIONS

Material Total Cost	$56,724,368.59	Material Total Cost	$56,724,368.59
ABC Costs	$24,998,548.42	F & P Costs	$19,980,527.46
TOTAL ABC BASED COST	$81,722,917.01	TOTAL F & P BASED COST	$76,704,896.05
% Material (Of Total ABC Based Cost)	69.41%	% Material (Of Total F & P Based Cost)	73.95%

PERCENTAGES BASED ON 1989 ACTUAL COSTS

Cost Class	Cost ($Millions)	Percent
Materials	$63.276	60.54%
Labour	$10.433	9.98%
Overhead	$30.813	29.48%
	$104.522	100.00%

The calculation based on product costs makes no allowances for wastage of materials but indicates that under either costing model, materials exceed 69% of an average product's cost. In fact, the divisional manager, Don Cooper, estimated that materials were 80% of the division's costs. However, he is at odds with the 1989 results.[1]

1. Interview with Don Cooper, Divisional Manager, January 1990.

Because the cost of materials is such a high proportion of a product's cost and is completely volume related, it will swamp any product costing model. It is important, therefore, to only consider non-material costs when considering the effectiveness of each costing model when swamping occurs. The higher the percentage of material, the higher the total percentage error between the costing models.

Figure 2

INFLUENCE OF MATERIALS ON PRODUCT COSTING ERROR

		Non-Material Error Percentage	
Material Percentage	Low	(1) Medium	(2) High
	High	(3) Low	(4) Medium

Total Error

This relationship is illustrated by the examples in table 5.

Table 5

EXAMPLES OF THE INFLUENCE OF MATERIALS ON PRODUCT COSTING ERRORS

	Material Percent	Material $	F & P	ABC	Non-Material Percent	Total Error Percent	Class
Square 2 Product A	90%	$90	$10	$20	100%	10%	Medium
Square 4 Product B	50%	$50	$50	$100	100%	50%	High
Square 3 Product C	90%	$990	$110	$121	10%	1%	Low

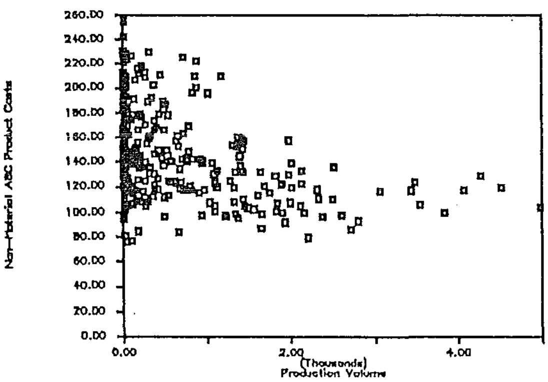
F. Influence of Production Volume Levels

Part of the evidence that a product costing system is incorrectly costing products is when high volume products appear to have low margins and low volume products appear to have high margins.[2] This shows that the existing product costing system is systematically over costing long run products and under costing short run products. The data from the case study was analysed to see if there was evidence of this effect.

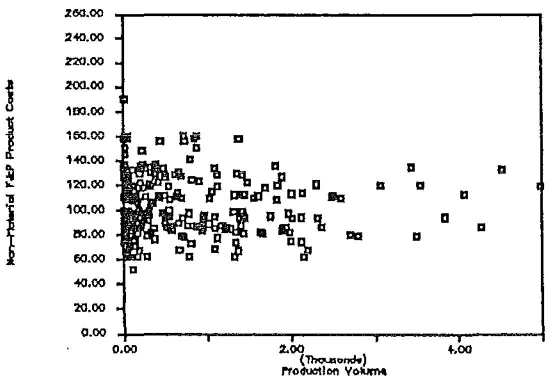
Because of the swamping effect of the high percentage of materials cost in any product's total cost, only non-materials costs were analysed. When both are graphed, the ABC model shows, in general, higher costs for low volume items than for high volume items whereas the Fisher & Paykel costing system shows costs to be randomly distributed, regardless of the volume of any product (see figure 3).

Figure 3

INFLUENCE OF PRODUCTION VOLUME ON PRODUCT COSTS



Non-Material ABC Product Costs



Non-Material F & P Product Costs

This seems to support the hypothesis that the traditional product costing system is systematically under-costing low volume products.

2. Cooper R., "You Need a New Costing System When...", Harvard Business Review, Jan-Feb 1989.

G. Export Versus Local Models

A common perception amongst all managers in the division is that export products are more costly than local products, meaning that export models are less profitable and take more effort than local models. The results of the study were analysed for evidence of this factor.

The product data was sorted into two sets; one set was export products and the other set, local products. T tests were carried out to see if the each costing model produced different costs for each set. The results of these tests are shown in table 6.

Table 6

T TESTS FOR EXPORT VERSUS LOCAL PRODUCTS

	ABC Cost	F & P Cost	ABC Margins	F & P Margins
t Test	3.359333	0.769900	-9.16312676	-10.8255091

As expected, there is no statistical difference between both sets for the F & P costing system but there is a statistically significant difference for the ABC costing system. Both sets are different when margins are considered but this is because a different pricing policy is used for export products than for local products.

F & P management suggest that differences between local and export product costs are caused by the increased engineering which must be carried out to meet overseas standards or to give some competitive edge.

A more general analysis of the data relating to the two sets of products is shown in table 7.

Table 7

GENERAL ANALYSIS OF EXPORT VERSUS LOCAL PRODUCTS

	No.	Volume	Selling Price	Material Costs	Activity Costs	Total Cost ABC Model	Total Cost F&P Model	Margin ABC Model	Margin F&P Model
Local Products									
Averages	113	942.5	$695.15	$299.73	$136.04	$435.77	$402.17	$259.38	$292.98
Std Deviation		945.3	$209.46	$78.96	$37.80	$106.61	$101.36	$117.76	$116.90
Export Products									
Averages	199	441.0	$573.04	$306.09	$190.86	$496.95	$411.52	$ 76.09	$161.52
Std Deviation		772.9	$156.40	$ 82.73	$208.51	$214.45	$106.02	$234.95	$ 72.64

From this table the following tentative generalizations can be made about export products. They are, on average:

1. Lower volume.
2. Lower price.
3. Higher indirect (activity) costs
4. Lower margin (when costed under ABC)

There are also more export models than local models (199 different models compared with 113 for the local market) This is to be expected as every model which is exported will normally require some sort of modification even if it is substantially based on an existing model.

When considering the influence of the Export/Local factor, the ability of the ABC model to represent product diversity is apparent. This appears to be a strength of the model and a weakness of the traditional model. However, a more detailed costing is required before the results could be considered to be conclusive.

H. Investigating the Relationship Between the Costing Models

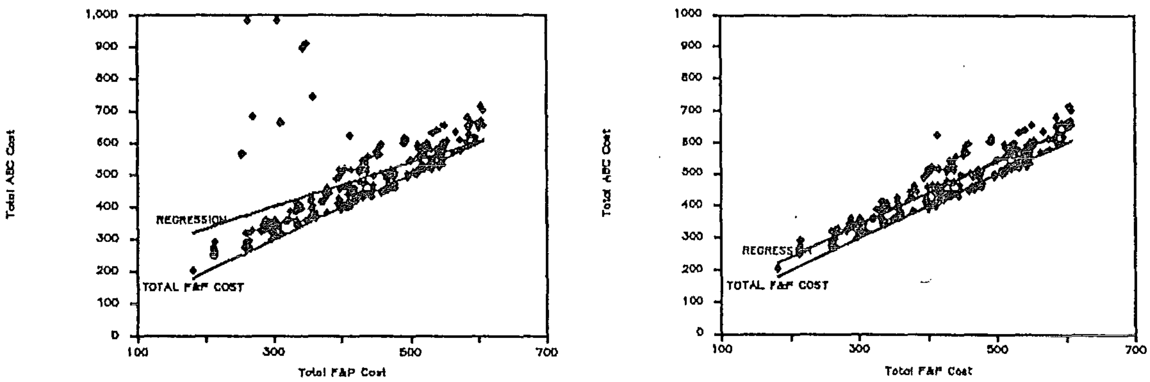
As there were such high correlations between the two costing models it seemed useful to investigate the relationship between the two models in more detail. Accordingly, two pairs of graphs were produced. The first pair consider the relationship between total product costs under each costing model (see figure 4).

The second pair considered the relationship between non-material costs under each model (see figure 5).

Each pair of graphs has the F & P model on the X axis and again as a line on the graph. Each ABC cost is graphed against its matching F & P costing to show a distribution along the F & P line. Finally, a regression was run for each graph showing the relationship between the two costing models. The Minitab output for these regressions is shown in Appendix No. 5. The regressions of non-material costs have very low validity with r²s of 0.2% for all products and 22.2% for the top 300 products. However, the regression line does give some idea of the trends within the ABC data.

Figure 4

COMPARISON BETWEEN THE COSTING MODELS USING TOTAL COSTS



(1)
All Product Costs

(2)
Top 300 Product Costs

Figure 5

COMPARISON BETWEEN THE COSTING MODELS USING NON-MATERIAL COSTS

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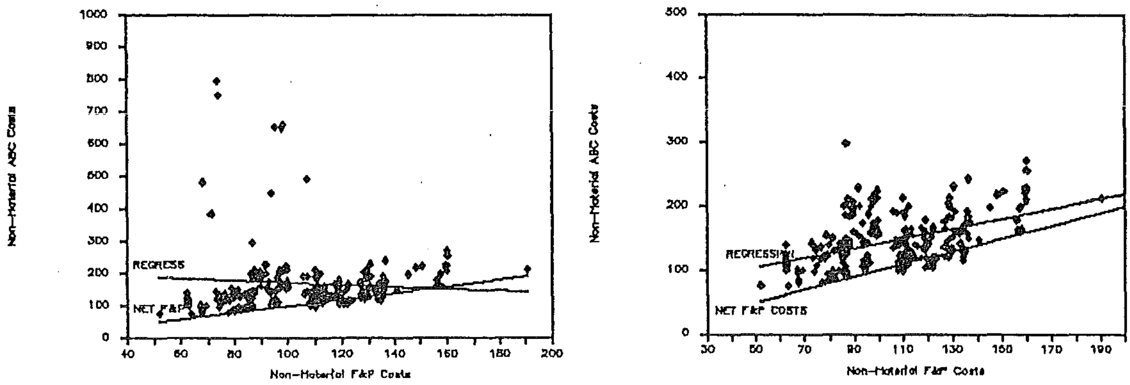


(3) **All Product Costs**

(4) **Top 300 Product Costs**

Having established that a reasonably strong relationship exists between both costing models for the top 300 products (the regression lines are virtually parallel to the F & P line), it is then interesting to identify why one product has an actual cost which is above the regression line and why another has one below. Various factors were analysed producing the results listed in table 8.

Table 8

REASONS WHY PRODUCTS ARE MORE OR LESS COSTLY THAN AVERAGE

	Total 312 Products				Top 300 Products			
	Average Production Volume	Exports vs Local Products	Total Quantity	Average Material Cost	Average Production Volume	Exports vs Local Products	Total Quantity	Average Material Cost
Above the Line	396	Export 104 70.3% Local 44 29.7%	148 Products	$302.80	376	Export 99 69.2% Local 44 30.8%	143 Products	$316.79
Below the Line	892	Export 83 54.6% Local 69 45.4%	152 Products	$312.59	895	Export 88 56.1% Local 69 43.9%	157 Products	$299.54

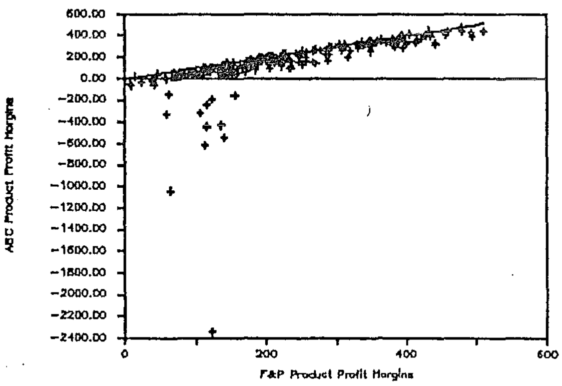
This analysis seems to suggest that volume is the strongest determinant of whether the product is expensive under the ABC model or not. High volume products are likely to be less expensive than low volume products. Also, export products are more likely to be expensive. This latter factor coincides with the intuition of divisional managers and analysis earlier in this chapter. It is possible that component count is also a factor but this data is not available for all models. It is only available for a sample model of each capacity and cannot, therefore, distinguish between export and local models. As this component count was used as a cost driver for the main factory overhead costs, it will not have captured the export/local distinction. If full data had been available, then it is likely that the influence of the export/local split would have been stronger.

III. Major Factors Influencing Profit Margins Under ABC

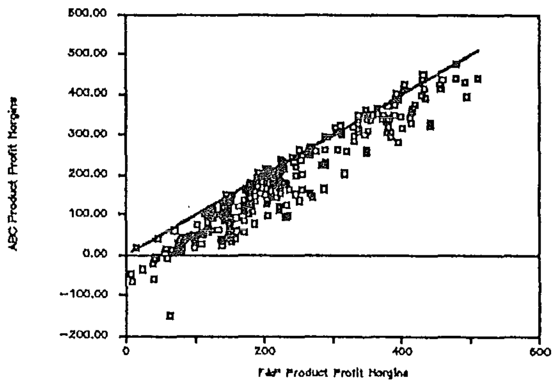
An analysis of the profitability of each product under both models reveals results consistent with the product cost analysis. The high cost items under ABC are, as would be expected, the lowest margin products.

Figure 6

PRODUCT PROFITABILITY MARGINS



(3)
All Product Margins



(4)
Top 300 Product Margins

ABC margins are lower because more costs are incorporated into the costing model. However, apart from the 12 lowest items, both models produce approximately the same ranking.

In order to get some idea of which factors are the major determinants of a product's profit margin, a series of regressions were carried out. It seems that, based on the analysis so far, there are four possible factors which would be the major influences on product margins. They are: production volume, export or local product, selling price and material costs. Minitab stepwise regressions were carried out on both the full data set of 312 products and the reduced set of 300 products. The Minitab output of these regressions is shown in Appendix No. 6

From this analysis, the two regressions are as follows:

All Products

Margin =-216.0 + 0.633 Price - 86.33 Export/Local + 0.0356 Volume

R^2 = 42.5%
DW = 1.97

Top 300 Products

Margin = -73.9 + 1.05 Price - 1.36 Material + 0.0122 Volume

R^2 = 93.7%
DW = 1.31

Autocorrelation seems to be a problem with the second regression, although the equation is a good predictor. Volume and price both have a strong positive influence on profit margins. Material costs have no influence when all products are considered but a negative influence when the top 300 products only are studied. The influence of the export/local classification occurs only when all products are considered. Its negative effect is to be expected as export products have already been established as having a higher cost than local products. This is a dummy variable (export = 1, local = 0).

IV. The Twelve Loss Making Products

Whereas there is a strong relationship between the costing systems for most products, in approximately twelve products, there is a significant difference between the two systems. Though the point at which the full set of products was divided into the "low margin" set and "the rest" was fairly arbitrary, the lowest twelve were selected on the basis that they have some characteristics in common (Table 9).

The first characteristic is they are all export models. The analysis so far has shown that, in general, export products have lower profit margins and these twelve are an extreme example of this factor.

Secondly, all twelve are relatively low volume products. Volume values range from 9 to 144 with an mean of 73 and a standard deviation of 49.7. However, there are profitable products with volumes as low as 2 so this factor has to be treated with caution.

Thirdly, included amongst the twelve are the four P190 models which were expected to be loss makers by Fisher & Paykel's management. The rest are all WWWW which means all components are white. This is an unusual combination requiring special attention so the management also expected them to be more expensive.

Table 9

THE TWELVE LOWEST MARGIN PRODUCTS

USING THE ABC PRODUCT COSTING MODEL

PART No.	DESCRIPTION	Component Count	FCAST USAGE	SELLING PRICE	MATL COSTS	ABC COST	TOTAL ABC	RAW NON-MAT F&P COST	STANDARD F&P COST	DIFFERENCE ABC - F&P	MARGIN ABC	MARGIN F&P	PERCENT DIFFERENCE	RANKINGS MARGIN ABC	RANKINGS MARGIN F&P	RANKINGS COST ABC	RANKINGS COST F&P
13143	C/FRIG P190 J WHWH V802	335.5004	9	$375.00	$182.33	$2,531.44	$2,713.77	$70.89	$253.22	$2,460.55	($2,338.77)	$121.78	971.70%	312	238	312	10
13158	C/SHACK P120 H WWWW V802	294.1827	84	$286.67	$160.26	$1,163.96	$1,324.22	$62.49	$222.75	$1,101.47	($1,037.55)	$63.92	494.49%	311	298	311	9
13150	C/SHACK P190 J WHWH V802	335.5004	41	$375.00	$189.15	$795.48	$984.63	$73.57	$262.72	$721.91	($609.63)	$112.28	274.78%	310	258	310	22
13161	C/SHACK C270 H WWWW V802	366.7612	29	$446.67	$231.99	$752.39	$984.38	$74.02	$306.01	$678.37	($537.71)	$140.66	221.68%	309	219	309	64
13226	C/SHACK F230 H WWWW V803	446.2559	16	$458.33	$247.04	$651.82	$898.86	$95.56	$342.60	$556.26	($440.53)	$115.73	162.36%	308	253	307	103
13167	C/SHACK F230 H WWWW V802	446.2559	29	$458.33	$245.27	$649.97	$895.24	$97.97	$343.24	$552.00	($436.91)	$115.09	160.82%	307	255	306	104
13160	C/SHACK C250T H WWWW V802	841.3787	108	$483.33	$249.07	$660.87	$909.94	$98.47	$347.54	$562.40	($426.61)	$135.79	161.82%	306	230	308	106
13056	C/FRIG C240B H WWWW V813	490.1461	144	$416.62	$251.13	$491.70	$742.83	$107.25	$358.38	$384.45	($326.21)	$58.24	107.27%	305	301	305	115
13184	C/SHACK C190 H WWWW V802	332.0560	47	$375.00	$200.75	$482.12	$682.87	$68.19	$268.94	$413.93	($307.87)	$106.06	153.91%	304	265	302	28
13159	C/SHACK C170T H WWWW V802	449.3367	124	$425.00	$215.82	$449.71	$665.53	$93.97	$309.79	$355.74	($240.53)	$115.21	114.83%	303	254	297	69
13101	C/KELV P190 J WHWH V802	335.5004	134	$375.00	$182.11	$384.19	$566.30	$71.41	$253.52	$312.78	($191.30)	$121.48	123.37%	302	239	244	11
15857	C/F&P P190 J WHWH V812	335.5004	112	$408.24	$182.69	$385.84	$568.53	$71.42	$254.11	$314.42	($160.29)	$154.13	123.73%	301	190	245	12
Means		417.3646	73.1	$406.93	$211.47	$783.29	$994.76	$82.10	$293.57	$701.19	($587.83)	$113.36	255.90%	306	250	296	54
Standard Deviations		147.8534	47.6	$ 51.37	$ 31.10	$566.89	$557.11	$14.56	$ 44.50	$571.67	$573.65	$ 26.76	238.90%	4	30	24	42
Remaining 300 Products																	
Means		514.1367	647.7	$628.00	$308.48	$146.97	$455.45	$105.58	$414.06	$ 41.39	$172.55	$213.94	10.72%	150	153	151	161
Standard Deviations		124.8685	884.6	$182.32	$ 78.80	$ 39.80	$106.64	$24.69	$100.92	$ 35.60	$120.55	$110.92	8.97%	87	90	87	89

The fourth factor is that the average price of these products is lower than the remaining 300 products. This is likely to be because the price is a function of the Fisher & Paykel cost. The Fisher & Paykel costing system ranks these products as relatively low cost products with a mean of 54th ranking.

All twelve products are quite small in capacity ranging from 120 litres to 250 litres. All are refrigerators which are by nature more complex than freezers. This suggests that they may have more components than the other 300 products. However, a check of the component count reveals that the mean of the 12 is 417.3646 components and the mean of other 300 is 514.1367. This is the opposite to what would be expected.

Material costs are another factor which gives an opposite result to that expected. Mean material cost for the twelve is $211.47 whereas it is $308.47 for the other 300.

Higher activity costs is the major cause of the lower margins. The mean for the 12 is $783.29 whereas it is only $146.97 for the other 300. This extra cost is most likely to be caused by the fact that they are export products, requiring, therefore, extra effort from the support departments. Export products also tend to be low volume.

Full MRP calculations were obtained for the 3 lowest margin products, part numbers 13143, 13158 and 13150. Investigation showed that the costs mostly came from components manufactured in the Plastics department. Each of these required very low volume custom components such as meat trays.[3] As costs for each component were spread evenly over each part number produced in the department, low volume components received very high costs and high volume components, low costs.

While this is not an error per se, more detailed analysis of the department and its activities would probably noticeably alter these costs. Nevertheless, ABC uses the principle that an activity costs the same whether one item is produced or one thousand, so the costs of these components are consistent with the model, though probably over-stated.

It would be unwise to rule out the possibility of errors in the data causing the high costings for these twelve products. Data errors have already been referred to in earlier chapters and these errors may have had a more dramatic effect on these particular 12 products. However, as a set, the twelve have different characteristics from the others, and so the costings should be substantially correct.

V. Final Survey Results

The final part of the analysis of the ABC costing was to survey senior managers on four factors:

1. Confirmation of their opinions on the usefulness of cost driver information.
2. Confirmation of their opinions on the usefulness of product costs.
3. An analysis of their perception of the profitability of different products.
4. An analysis of how well the ABC model matches their perception of the cost of products.

3. This used part number 873889 of which only 9 were made. As $19,413.27 was traced to this part number, it received a unit cost of $$2,157.03.

The questionnaire used is that shown in Appendix No. 7. The first two factors were tested by questions, while the third factor was tested by giving five sets of 25 products listed in part number sequence. Each manager had to assign a ranking with 1 as the most profitable and 312 as the least profitable product. The first two sets were the 25 lowest ranked products and the 25 highest ranked products using ABC. The third and fourth sets were the 25 lowest ranked products and the 25 highest ranked products using the F & P costing model. The final set was 25 products selected at random.

In order to test how well the ABC model match managers' perception of product costs, the managers were given three product lists showing information such as ABC costs and margins, F & P costs and margins, material costs and selling prices. In addition profitability rankings were given using each costing model. These lists contained the 25 worst products, the 25 best products and the middle 25 products using ABC profitability rankings.

The results of the survey will be analysed in respect of each of the questions it addressed.

A. Usefulness of Cost Driver Information

A majority of the managers were unsure how useful this information would be for management purposes. They generally seemed unsure how it could be used and whether it could be trusted. However, the Factory Manager thought it would be very useful for:

1. Capital expenditure proposals.
2. Analysis of the impact of changes to processes.
3. Performance analysis.

It is possible that the low opinion of cost driver information could be caused by unfamiliarity with the concept and the fact that it has never been available in the past.

B. Product Cost Information

There seemed to be an increase in the perceived benefit of accurate product cost information. The Marketing Manager was the only one in the first survey who thought that product costs were very important but now the others were beginning to say the same. This is probably a result of the increase in competition over the past year. This year has seen the dropping of several products from the line because they were poor performers. Included in these was the P190, already identified at the beginning of the year as a "dog".[4] In addition, product costs, broken down into their component costs, are now being included in monthly reports. This is evidence of a rising demand for detailed information of this type.

However, there is still perceived to be a problem between the role of product costs in product mix selection compared to other factors. It is still considered to be important to provide products for strategic blocking reasons. Also, there is a general fear that excessive concentration on margins may cause products to be dropped in the short term that may perform well in the long term. This conflict between product costs and other factors influencing product mix selections should be researched further for its implications for product costing models.

4. The Boston Consulting Group's original matrix defines a dog as a product with low market growth and low market share [Johnson G. and K. Scholes, Exploring Corporate Strategy, Prentice Hall, 1984, pp. 217-218]. Dogs are products which are a cash drain on the company but Johnson and Scholes warn that dogs may have to be kept in production to provide a platform for "Stars" which are high market growth, high market share products. F & P adopt this policy to a quite high level.

C. Profitability Ranking Analysis

The most striking feature of the profitability ranking analysis is the high degree of accuracy which managers attained. All managers were good at assessing which products were making the most money for the Division and which were not. The correlation between managers' rankings and the ABC model are shown in Table 10 and with the F & P model in Table 11.

Table 10

CORRELATIONS BETWEEN PROFITABILITY RANKING: MANAGERS VERSUS THE ABC MODEL

Manager	ABC	Engineer	Division	Factory	Marketing
Engineer	0.564				
Division	0.895	0.721			
Factory	0.770	0.190	0.538		
Marketing	0.723	0.167	0.475	0.889	
Average	0.942	0.673	0.887	0.813	0.780

Table 11

CORRELATIONS BETWEEN PROFITABILITY RANKING: MANAGERS VERSUS THE F & P MODEL

Manager	ABC	Engineer	Division	Factory	Marketing
Engineer	0.540				
Division	0.848	0.721			
Factory	0.763	0.190	0.538		
Marketing	0.759	0.167	0.475	0.889	
Average	0.925	0.673	0.887	0.813	0.780

Neither costing model appears to be significantly better than the other at representing management perception of product profitability. This is most likely to be because of the high correlation between the two costing models. However, despite this, the conclusion can be drawn that the ABC model is supported by management perception of product profitability.

D. The ABC Costings

Managers, when presented with the findings of the ABC costing exercise, supported its results. On a scale of 1 to 7 each manager was asked to grade the accuracy of the ABC costings. The results are given in Table 12.

Table 12

MANAGEMENT ASSESSMENT OF THE ABC RESULTS

Manager	Grade
Engineer	2.0
Division	2.5
Factory	3.0
Marketing	2.5
Average	2.5

While none rated it as exactly matching their perception of profitability, all rated it quite highly. All noted exceptions, where costing results surprised them. However, none said the rankings were necessarily wrong.

Overall, the managers accepted the results. The divisional manager did not accept some of the assumptions relating to cost drivers but believed that these were a result of errors in the data passed to the model. He accepted that more detailed analysis in this area could cure these problems.

VI. Conclusions

Analysis of the results of the ABC costing exercise proved that both the ABC model and the F & P model gave similar results. This outcome is caused by the fact that material is about 70% of a product's cost. As a result, the impact of different costing models on product costs is generally low. However, the ABC model does show that low volume products are generally under costed and high volume products are over costed by the traditional model. This is consistent with other case studies using ABC.

Increased support from indirect departments is required for export products and these show higher costs under ABC than the F & P model. This is also consistent with other case studies.

Finally, management perception of product profitability performance coincides with that provided by the ABC model. The fact that it also coincides with the F & P model does not prevent the conclusion that the ABC model produces economically valid results. What it does do is cast doubt as to whether the relatively low increase in accuracy is worth the extra cost of implementing the model.

VII. Appendices

Appendix No. 1

LISTING OF ALL PART NUMBERS

PART NUMBER	DESCRIPTION	FCAST USAGE	SELLING PRICE	MATL COSTS	ABC COST	TOTAL ABC	RAW STD F&P COST	DIFFERENCE ABC - F&P	PERCENT DIFFERENCE	MARGIN ABC	MARGIN F&P	ABC RANK	F&P RANK
12500	C/KELV H160SL J WHWH V802	42	$341.00	$188.58	$136.01	$324.59	$264.89	$59.70	22.54%	$16.41	$76.11	35	25
12501	C/KELV H220SL J WHWH V802	15	$375.00	$205.49	$123.00	$328.49	$284.77	$43.72	15.35%	$46.51	$90.23	39	33
12502	C/KELV H360SL J WHWH V802	15	$456.67	$250.13	$142.36	$392.49	$337.32	$55.17	16.36%	$64.18	$119.35	93	96
12503	C/KELV H510SL J WHWH V802	8	$555.00	$306.13	$187.49	$493.62	$395.96	$97.66	24.66%	$61.38	$159.04	186	139
12504	C/KELV H701SL J WHWH V802	9	$690.00	$364.25	$200.64	$564.89	$456.40	$108.49	23.77%	$125.11	$233.60	243	206
12505	C/KELV H220EL J WHWH V802	174	$403.33	$234.21	$126.26	$360.47	$321.10	$39.37	12.26%	$42.86	$82.23	73	75
12506	C/KELV H360EL J WHWH V802	200	$491.67	$278.50	$144.46	$422.96	$374.08	$48.88	13.07%	$68.71	$117.59	128	125
12508	C/KELV H510EL J WHWH V802	130	$600.00	$322.28	$191.37	$513.65	$429.53	$84.12	19.58%	$86.35	$170.47	203	181
12509	C/KELV H701EL J WHWH V802	5	$758.33	$392.79	$213.20	$605.99	$492.46	$113.53	23.05%	$152.34	$265.87	278	234
12512	C/KELV H360EL J WHWH V810	287	$481.67	$290.25	$154.76	$445.01	$382.26	$62.75	16.42%	$36.66	$99.41	150	130
12515	C/SHARP H160EL J WHWH V810	576	$325.00	$218.20	$141.69	$359.89	$301.92	$57.97	19.20%	($34.89)	$23.08	72	55
12516	C/SHARP H220EL J WHWH V810	4265	$378.33	$234.74	$129.03	$363.77	$321.52	$42.25	13.14%	$14.56	$56.81	77	76
12518	C/SHACK H220SL J WHWH V810	3494	$383.75	$209.32	$124.11	$333.43	$288.59	$44.84	15.54%	$50.32	$95.16	45	42
12519	C/SHACK H360SL J WHWH V810	1428	$471.25	$258.03	$150.50	$408.53	$339.47	$69.06	20.34%	$62.72	$131.78	111	99
12520	C/SHACK H510SL J WHWH V810	1021	$585.00	$311.62	$195.84	$507.46	$400.86	$106.60	26.59%	$77.54	$184.14	196	149
12521	C/SHACK H701SL J WHWH V810	1175	$737.50	$362.86	$209.87	$572.73	$450.65	$122.08	27.09%	$164.77	$286.85	250	202
12522	C/SHACK H701SL J WHWH V802	881	$690.00	$353.30	$200.92	$554.22	$439.57	$114.65	26.08%	$135.78	$250.43	234	196
12524	C/SHACK H220SL J WHWH V802	697	$375.00	$205.88	$123.40	$329.28	$285.16	$44.12	15.47%	$45.72	$89.84	41	34
12525	C/SHACK H360SL J WHWH V802	766	$456.67	$249.81	$143.05	$392.86	$336.99	$55.87	16.58%	$63.81	$119.68	94	95
12526	C/SHACK H510SL J WHWH V802	489	$555.00	$306.11	$188.13	$494.24	$395.94	$98.30	24.83%	$60.76	$159.06	188	138
12527	C/SHARP H360EL J WHWH V810	659	$453.33	$284.54	$160.80	$445.34	$374.47	$70.87	18.93%	$7.99	$78.86	151	126
12528	C/SHACK H160SL J WHWH V803	127	$348.33	$191.33	$138.17	$329.50	$267.64	$61.86	23.11%	$18.83	$80.69	42	26
12530	C/SHACK H360SL J WHWH V803	536	$456.67	$254.06	$145.08	$399.14	$339.78	$59.36	17.47%	$57.53	$116.89	101	101
12531	C/SHACK H701SL J WHWH V803	104	$690.00	$363.60	$226.43	$590.03	$455.39	$134.64	29.57%	$99.97	$234.61	265	205
12532	C/SHACK H510SL J WHWH V803	147	$555.00	$308.36	$206.97	$515.33	$398.01	$117.32	29.48%	$39.67	$156.99	206	145
12533	C/KELV H510SL J WHWH V803	3	$555.00	$314.56	$206.48	$521.04	$404.21	$116.83	28.90%	$33.96	$150.79	214	150
12534	C/KELV H360SL J WHWH V803	6	$456.67	$254.05	$144.38	$398.43	$339.77	$58.66	17.26%	$58.24	$116.90	99	100
12535	C/KELV H220SL J WHWH V803	272	$375.00	$207.20	$124.90	$332.10	$286.48	$45.62	15.92%	$42.90	$88.52	44	39
12536	C/KELV H160SL J WHWH V803	43	$348.33	$191.33	$137.91	$329.24	$267.64	$61.60	23.02%	$19.09	$80.69	40	27
12538	C/KELV H360EL J WHWH V803	38	$491.67	$281.71	$146.52	$428.23	$375.82	$52.41	13.95%	$63.44	$115.85	133	127
12539	C/KELV H510EL J WHWH V803	16	$600.00	$333.82	$210.24	$544.06	$430.88	$113.18	26.27%	$55.94	$169.12	228	183
12540	C/FRIG H360EL J WHWH V813	96	$487.19	$285.99	$174.52	$460.51	$379.21	$81.30	21.44%	$26.68	$107.98	163	129
12541	C/FRIG H510EL J WHWH V813	41	$578.81	$338.36	$200.80	$539.16	$435.39	$103.77	23.83%	$39.65	$143.42	225	190
12542	C/FRIG H701EL J WHWH V813	52	$761.52	$392.57	$223.93	$616.50	$492.15	$124.35	25.27%	$145.02	$269.37	283	233
12545	C/KELV H701SL J WHWH V803	5	$690.00	$366.33	$228.00	$594.33	$458.21	$136.12	29.71%	$95.67	$231.79	268	207
12552	C/KELV H160EL J WHWH V802	2	$366.67	$216.64	$134.49	$351.13	$300.47	$50.66	16.86%	$15.54	$66.20	62	54
12854	C/FRIG F310 J WHWH	1228	$661.64	$310.39	$96.67	$407.06	$397.04	$10.02	2.52%	$254.58	$264.60	110	140
12855	C/FRIG C370 J WHWH	1656	$710.52	$273.66	$98.84	$372.50	$355.01	$17.49	4.93%	$338.02	$355.51	82	110
12856	C/FRIG C365H J WHWH	429	$802.18	$310.97	$149.40	$460.37	$420.34	$40.03	9.52%	$341.81	$381.84	162	167
12857	C/FRIG C335T J WHWH	1610	$722.75	$300.67	$113.77	$414.44	$411.83	$2.61	0.63%	$308.31	$310.92	120	159
12859	C/FRIG C390T J WHWH	636	$796.28	$320.70	$123.25	$443.95	$431.54	$12.41	2.88%	$352.33	$364.74	149	186
12860	C/FRIG N375T J SASA	8	$924.61	$381.67	$212.14	$593.81	$510.80	$83.01	16.25%	$330.80	$413.81	267	243
12861	C/FRIG C380B J WHWH	3062	$814.61	$348.38	$116.51	$464.89	$468.35	($3.46)	-0.74%	$349.72	$346.26	169	216
12865	C/FRIG N400H J SASA	8	$1,077.49	$424.58	$256.91	$681.49	$584.43	$97.06	16.61%	$396.00	$493.06	301	298
12866	C/FRIG C410B J WHWH	913	$881.95	$355.19	$115.82	$471.01	$478.33	($7.32)	-1.53%	$410.94	$403.62	175	228
12867	C/FRIG N395B J SASA	203	$998.05	$406.37	$178.27	$584.64	$542.04	$42.60	7.86%	$413.41	$456.01	261	278
12868	C/KELV F310 J SASA	201	$686.08	$311.08	$145.60	$456.68	$397.68	$59.00	14.84%	$229.40	$288.40	159	144
12869	C/KELV C370 J SASA	275	$734.97	$274.79	$139.89	$414.68	$354.50	$60.18	16.98%	$320.29	$380.47	121	109
12870	C/KELV C365H J WHWH	690	$802.18	$312.26	$118.34	$430.60	$422.15	$8.45	2.00%	$371.58	$380.03	136	170
12871	C/KELV C335T J SASA	30	$747.19	$305.59	$142.24	$447.83	$416.47	$31.36	7.53%	$299.36	$330.72	154	166

Appendix No. 1

LISTING OF ALL PART NUMBERS

PART NUMBER	DESCRIPTION	FCAST USAGE	SELLING PRICE	MATL COSTS	ABC COST	TOTAL ABC	RAW STD F&P COST	DIFFERENCE ABC - F&P	PERCENT DIFFERENCE	MARGIN ABC	MARGIN F&P	ABC RANK	F&P RANK
12873	C/KELV C390T J WHWH	1030	$796.28	$322.31	$107.58	$429.89	$431.94	($2.05)	-0.47%	$366.39	$364.34	135	187
12874	C/KELV N375T J SASA	12	$924.61	$383.54	$198.08	$581.62	$512.78	$68.84	13.42%	$342.99	$411.83	259	246
12875	C/KELV C380B J SASA	532	$839.06	$349.02	$149.69	$498.71	$467.74	$30.97	6.62%	$340.35	$371.32	192	214
12879	C/KELV N400H J SASA	14	$1,077.49	$425.28	$221.74	$647.02	$584.82	$62.20	10.64%	$430.47	$492.67	290	299
12880	C/KELV C410B J WHWH	1482	$881.95	$355.63	$103.48	$459.11	$477.66	($18.55)	-3.88%	$422.84	$404.29	160	226
12881	C/KELV N395B J SASA	377	$998.05	$407.73	$166.53	$574.26	$541.94	$32.32	5.96%	$423.79	$456.11	252	277
12882	C/SHACK F310 J WHWH	1216	$571.86	$314.92	$97.42	$412.34	$399.97	$12.37	3.09%	$159.52	$171.89	117	148
12883	C/SHACK C370 J WHWH	1898	$613.55	$276.95	$99.65	$376.60	$360.95	$15.65	4.34%	$236.95	$252.60	84	118
12884	C/FRIG N375T J WHWH	686	$900.16	$377.47	$134.64	$512.11	$505.32	$6.79	1.34%	$388.05	$394.84	202	239
12885	C/SHACK C335T J WHWH	1324	$623.98	$303.58	$108.57	$412.15	$415.95	($3.80)	-0.91%	$211.83	$208.03	116	165
12887	C/SHACK C390T J WHWH	417	$687.40	$320.47	$118.11	$438.58	$432.05	$6.53	1.51%	$248.82	$255.35	142	189
12888	C/SHACK N375T J WHWH	372	$776.00	$377.32	$130.50	$507.82	$507.49	$0.33	0.07%	$268.18	$268.51	197	240
12889	C/SHACK C380B J WHWH	2313	$703.03	$341.83	$118.02	$459.85	$462.55	($2.70)	-0.58%	$243.18	$240.48	161	210
12892	C/SHACK N405T J WHWH	470	$839.05	$393.86	$143.18	$537.04	$527.12	$9.92	1.88%	$302.01	$311.93	224	263
12894	C/FRIG N400H J WHWH	838	$1,053.05	$416.47	$196.36	$612.83	$573.97	$38.86	6.77%	$440.22	$479.08	281	294
12895	C/SHACK C410B J WHWH	821	$760.87	$348.82	$117.41	$466.23	$472.70	($6.47)	-1.37%	$294.64	$288.17	170	220
12896	C/SHACK N395B J WHWH	1085	$839.05	$400.44	$130.58	$531.02	$534.35	($3.33)	-0.62%	$308.03	$304.70	220	269
12906	C/F&P N395B H WWWW V812	1355	$866.21	$398.81	$152.84	$551.65	$528.64	$23.01	4.35%	$314.56	$337.57	231	264
12914	C/F&P N405T H WWWW V812	413	$847.01	$377.97	$168.09	$546.06	$500.37	$45.69	9.13%	$300.95	$346.64	229	238
12953	C/FRIG N395B J WHWH	1817	$973.61	$407.19	$129.34	$536.53	$542.65	($6.12)	-1.13%	$437.08	$430.96	223	279
12954	C/KELV F310 J WHWH	1931	$661.64	$310.79	$92.13	$402.92	$397.53	$5.39	1.36%	$258.72	$264.11	105	143
12955	C/KELV C370 J WHWH	2705	$710.52	$274.50	$86.42	$360.92	$354.35	$6.57	1.85%	$349.60	$356.17	75	108
12956	C/KELV C335T J WHWH	2607	$722.75	$301.39	$98.05	$399.44	$411.34	($11.90)	-2.89%	$323.31	$311.41	102	156
12957	C/KELV N375T J WHWH	1115	$900.16	$379.33	$120.10	$499.43	$507.64	($8.21)	-1.62%	$400.73	$392.52	193	241
12958	C/KELV C380B J WHWH	4986	$814.61	$348.82	$104.17	$452.99	$467.68	($14.69)	-3.14%	$361.62	$346.93	158	213
12960	C/KELV N400H J WHWH	1375	$1,053.05	$417.07	$160.60	$577.67	$574.61	$3.06	0.53%	$475.38	$478.44	254	295
12961	C/KELV N395B J WHWH	3440	$973.61	$407.53	$116.95	$524.48	$541.88	($17.40)	-3.21%	$449.13	$431.73	216	276
12962	C/KELV P120 J WHWH	2156	$359.21	$149.71	$100.20	$249.91	$212.30	$37.61	17.72%	$109.30	$146.91	2	3
12963	C/KELV C190 J WHWH	2205	$465.95	$191.79	$79.56	$271.35	$259.40	$11.95	4.61%	$194.60	$206.55	7	18
12964	C/KELV F160 J WHWH	1397	$459.75	$200.65	$136.87	$337.52	$288.52	$49.00	16.98%	$122.23	$171.23	46	41
12965	C/KELV C170T J WHWH	3835	$484.55	$212.21	$100.10	$312.31	$306.70	$5.61	1.83%	$172.24	$177.85	18	67
12966	C/KELV C270 J WHWH	1339	$542.93	$222.77	$98.47	$321.24	$296.66	$24.58	8.29%	$221.69	$246.27	29	48
12967	C/KELV C250T J WHWH	1316	$573.71	$242.30	$154.08	$396.38	$341.61	$54.77	16.03%	$177.33	$232.10	98	102
12968	C/KELV C240B J WHWH	4076	$573.71	$248.78	$117.39	$366.17	$361.42	$4.75	1.31%	$207.54	$212.29	78	120
12969	C/KELV F230 J WHWH	1427	$549.09	$240.14	$110.01	$350.15	$335.74	$14.41	4.29%	$198.94	$213.35	61	93
12970	C/FRIG P120 J WHWH	1327	$359.21	$149.96	$119.76	$269.72	$212.46	$57.26	26.95%	$89.49	$146.75	6	5
12971	C/FRIG C190 J WHWH	1369	$465.95	$192.15	$95.49	$287.64	$259.28	$28.36	10.94%	$178.31	$206.67	12	17
12972	C/FRIG F160 J WHWH	927	$459.75	$200.53	$142.14	$342.67	$288.31	$54.36	18.85%	$117.08	$171.44	51	40
12973	C/FRIG C170T J WHWH	2324	$484.55	$211.78	$110.70	$322.48	$305.67	$16.81	5.50%	$162.07	$178.88	31	63
12975	C/FRIG C270 J WHWH	804	$542.93	$223.27	$120.15	$343.42	$296.48	$46.94	15.83%	$199.51	$246.45	53	45
12976	C/FRIG C250T J WHWH	788	$573.71	$240.40	$169.24	$409.64	$337.91	$71.73	21.23%	$164.07	$235.80	112	97
12977	C/FRIG C240B J WHWH	2512	$573.71	$249.22	$136.21	$385.43	$360.70	$24.73	6.86%	$188.28	$213.01	86	117
12978	C/FRIG F230 J WHWH	973	$549.09	$240.00	$117.10	$357.10	$335.50	$21.60	6.44%	$191.99	$213.59	68	91
12980	C/SHACK P120 J WHWH	779	$310.32	$150.91	$140.97	$291.88	$213.36	$78.52	36.80%	$18.44	$96.96	13	7
12981	C/SHACK C190 J WHWH	1089	$402.59	$195.24	$100.60	$295.84	$264.29	$31.55	11.94%	$106.75	$138.30	15	24
12982	C/SHACK F160 J WHWH	581	$397.29	$200.73	$140.24	$340.97	$288.61	$52.36	18.14%	$56.32	$108.68	50	43
12983	C/SHACK C170T J WHWH	1439	$418.11	$211.31	$105.04	$316.35	$305.44	$10.91	3.57%	$101.76	$112.67	22	62
12985	C/SHACK C270 J WHWH	724	$469.36	$229.07	$118.16	$347.23	$306.94	$40.29	13.13%	$122.13	$162.42	58	68
12987	C/SHACK C240B J WHWH	1423	$495.61	$243.00	$131.92	$374.92	$355.54	$19.38	5.45%	$120.69	$140.07	83	112
12988	C/SHACK F230 J WHWH	543	$474.61	$240.22	$113.38	$353.60	$335.82	$17.78	5.29%	$121.01	$138.79	65	94

Appendix No. 1

LISTING OF ALL PART NUMBERS

PART NUMBER	DESCRIPTION	FCAST USAGE	SELLING PRICE	MATL COSTS	ABC COST	TOTAL ABC	RAW STD F&P COST	DIFFERENCE ABC - F&P	PERCENT DIFFERENCE	MARGIN ABC	MARGIN F&P	ABC RANK	F&P RANK
12996	C/FRIG H160S J WHWH V802	3	$331.67	$184.42	$136.80	$321.22	$258.86	$62.36	24.09%	$10.45	$72.81	28	15
12997	C/FRIG H220S J WHWH V802	13	$358.33	$202.71	$123.88	$326.59	$280.12	$46.47	16.59%	$31.74	$78.21	37	29
12998	C/FRIG H360S J WHWH V802	5	$440.00	$244.59	$144.70	$389.29	$329.91	$59.38	18.00%	$50.71	$110.09	91	78
13002	C/KELV H160S J WHWH V802	5	$331.67	$185.83	$133.24	$319.07	$260.36	$58.71	22.55%	$12.60	$71.31	24	19
13003	C/KELV H220S J WHWH V802	5	$358.33	$202.73	$120.23	$322.96	$280.24	$42.72	15.24%	$35.37	$78.09	32	30
13004	C/KELV H360S J WHWH V802	10	$440.00	$247.38	$139.59	$386.97	$332.79	$54.18	16.28%	$53.03	$107.21	87	83
13005	C/KELV H510S J WHWH V802	16	$538.33	$303.37	$184.72	$488.09	$391.43	$96.66	24.69%	$50.24	$146.90	181	131
13006	C/KELV H701S J WHWH V802	10	$673.33	$361.50	$197.87	$559.37	$451.87	$107.50	23.79%	$113.96	$221.46	238	203
13007	C/SHACK H160S J WHWH V802	24	$331.67	$185.83	$133.50	$319.33	$260.36	$58.97	22.65%	$12.34	$71.31	25	20
13008	C/SHACK H220S J WHWH V802	27	$358.33	$203.13	$120.63	$323.76	$280.63	$43.13	15.37%	$34.57	$77.70	34	31
13009	C/SHACK H360S J WHWH V802	25	$440.00	$246.91	$140.22	$387.13	$332.33	$54.80	16.49%	$52.87	$107.67	88	80
13011	C/SHACK H510S J WHWH V802	14	$538.33	$303.38	$185.42	$488.80	$391.43	$97.37	24.88%	$49.53	$146.90	182	132
13012	C/SHACK H701S J WHWH V802	16	$673.33	$361.51	$199.01	$560.52	$451.88	$108.64	24.04%	$112.81	$221.45	239	204
13013	C/KELV H160E J WHWH	1982	$394.91	$216.88	$129.86	$346.74	$298.93	$47.81	15.99%	$48.17	$95.98	57	51
13014	C/KELV H220E J WHWH	1892	$456.77	$234.43	$121.50	$355.93	$319.52	$36.41	11.40%	$100.84	$137.25	67	74
13016	C/KELV H360E J WHWH	2012	$598.87	$278.72	$139.70	$418.42	$372.44	$45.98	12.35%	$180.45	$226.43	124	123
13017	C/KELV H510E J WHWH	518	$778.04	$332.50	$187.08	$519.58	$428.42	$91.16	21.28%	$258.46	$349.62	213	180
13018	C/KELV H701E J WHWH	273	$932.71	$393.01	$209.03	$602.04	$491.38	$110.66	22.52%	$330.67	$441.33	274	231
13019	C/SHACK H160E J WHWH	320	$342.10	$216.96	$131.65	$348.61	$299.02	$49.59	16.58%	($6.51)	$43.08	59	52
13020	C/SHACK H220E J WHWH	580	$395.88	$234.05	$123.66	$357.71	$319.13	$38.58	12.09%	$38.17	$76.75	69	73
13021	C/SHACK H360E J WHWH	710	$518.88	$278.81	$142.37	$421.18	$372.53	$48.65	13.06%	$97.70	$146.35	126	124
13022	C/SHACK H510E J WHWH	301	$673.88	$332.43	$189.62	$522.05	$428.35	$93.70	21.87%	$151.83	$245.53	215	179
13023	C/SHACK H701E J WHWH	195	$808.49	$393.41	$212.08	$605.49	$491.78	$113.71	23.12%	$203.00	$316.71	276	232
13024	C/FRIG H160E J WHWH	1343	$394.91	$216.81	$132.23	$349.04	$298.77	$50.27	16.83%	$45.87	$96.14	60	50
13025	C/FRIG H220E J WHWH	1272	$456.77	$233.97	$125.25	$359.22	$318.96	$40.26	12.62%	$97.55	$137.81	70	72
13026	C/FRIG H360E J WHWH	1390	$598.87	$278.65	$145.02	$423.67	$372.28	$51.39	13.80%	$175.20	$226.59	129	122
13027	C/FRIG H510E J WHWH	351	$778.04	$322.43	$192.39	$514.82	$428.26	$86.56	20.21%	$263.22	$349.78	205	178
13028	C/FRIG H701E J WHWH	185	$932.71	$392.78	$215.69	$608.47	$491.06	$117.41	23.91%	$324.24	$441.65	280	230
13039	C/F&P F310 H WWWW	358	$686.08	$311.54	$112.19	$423.73	$397.20	$26.53	6.68%	$262.35	$288.88	130	141
13040	C/F&P C370 H WWWW	371	$734.97	$277.45	$118.59	$396.04	$353.96	$42.08	11.89%	$338.93	$381.01	97	107
13041	C/F&P C365H H WWWW	180	$826.63	$311.32	$155.49	$466.81	$411.64	$55.17	13.40%	$359.82	$414.99	171	158
13042	C/F&P C335T H WWWW	322	$747.19	$303.60	$135.41	$439.01	$409.78	$29.23	7.13%	$308.18	$337.41	143	155
13043	C/F&P C390T H WWWW	166	$820.73	$324.47	$147.20	$471.67	$431.47	$40.20	9.32%	$349.06	$389.26	176	185
13044	C/F&P C380B H WWWW	1057	$839.06	$349.97	$139.56	$489.53	$464.77	$24.76	5.33%	$349.53	$374.29	183	211
13047	C/F&P C410B H WWWW	226	$906.39	$355.87	$136.49	$492.36	$473.98	$18.38	3.88%	$414.03	$432.41	185	222
13056	C/FRIG C240B H WWWW V813	144	$416.62	$251.13	$491.70	$742.83	$358.38	$384.45	107.27%	($326.21)	$58.24	305	115
13065	C/KELV C229 J WHWH	1650	$526.60	$221.23	$87.05	$308.28	$303.34	$4.94	1.63%	$218.32	$223.26	17	57
13067	C/KELV N369B J WHWH	1689	$906.27	$397.42	$120.85	$518.27	$515.13	$3.14	0.61%	$388.00	$391.14	211	248
13068	C/FRIG C229 J WHWH	935	$526.60	$220.45	$97.94	$318.39	$304.03	$14.36	4.72%	$208.21	$222.57	23	59
13070	C/FRIG N369B J WHWH	1123	$906.27	$396.53	$133.13	$529.66	$515.35	$14.31	2.78%	$376.61	$390.92	218	250
13071	C/SHACK C229 J WHWH	1224	$454.69	$224.73	$96.55	$321.28	$310.07	$11.21	3.62%	$133.41	$144.62	30	70
13100	C/KELV P120 J WHWH V802	271	$286.67	$149.83	$105.63	$255.46	$212.42	$43.04	20.26%	$31.21	$74.25	3	4
13101	C/KELV P190 J WHWH V802	134	$375.00	$182.11	$384.19	$566.30	$253.52	$312.78	123.37%	($191.30)	$121.48	244	11
13102	C/KELV C170T J WHWH V802	2120	$425.00	$209.25	$105.28	$314.53	$303.74	$10.79	3.55%	$110.47	$121.26	20	58
13103	C/KELV C380B J WHWH V802	299	$646.67	$323.15	$108.31	$431.46	$444.49	($13.03)	-2.93%	$215.21	$202.18	138	198
13104	C/KELV C410B J WHWH V802	202	$665.00	$352.67	$107.92	$460.59	$474.69	($14.10)	-2.97%	$204.41	$190.31	165	223
13105	C/FRIG P120 J WHWH V802	54	$286.67	$149.26	$126.40	$275.66	$211.75	$63.91	30.18%	$11.01	$74.92	9	2
13106	C/FRIG C170T J WHWH V802	241	$425.00	$208.82	$116.55	$325.37	$302.71	$22.66	7.49%	$99.63	$122.29	36	56
13107	C/FRIG C250T J WHWH V802	65	$483.33	$237.79	$175.19	$412.98	$335.30	$77.68	23.17%	$70.35	$148.03	118	90
13108	C/FRIG C335T J WHWH V802	116	$551.67	$297.71	$118.92	$416.63	$408.87	$7.76	1.90%	$135.04	$142.80	122	154

Appendix No. 1

LISTING OF ALL PART NUMBERS

PART NUMBER	DESCRIPTION	FCAST USAGE	SELLING PRICE	MATL COSTS	ABC COST	TOTAL ABC	RAW STD F&P COST	DIFFERENCE ABC - F&P	PERCENT DIFFERENCE	MARGIN ABC	MARGIN F&P	ABC RANK	F&P RANK
13109	C/FRIG C390T J WHWH V802	61	$630.00	$318.43	$128.31	$446.74	$431.95	$14.79	3.42%	$183.26	$198.05	153	188
13113	C/FRIG N400H J WHWH V802	3	$808.33	$428.70	$200.83	$629.53	$586.43	$43.10	7.35%	$178.80	$221.90	286	300
13114	C/KELV N375T J WHWH V802	621	$700.00	$383.93	$124.63	$508.56	$512.25	($3.69)	-0.72%	$191.44	$187.75	200	245
13115	C/KELV N395B J WHWH V802	372	$770.00	$412.30	$121.59	$533.89	$546.64	($12.75)	-2.33%	$236.11	$223.36	222	281
13116	C/KELV N405T J WHWH V802	189	$753.33	$397.02	$134.99	$532.01	$526.80	$5.21	0.99%	$221.32	$226.53	221	262
13117	C/KELV N400H J WHWH V802	10	$808.33	$429.30	$165.21	$594.51	$587.07	$7.44	1.27%	$213.82	$221.26	269	301
13118	C/KELV N375T J ALAL V802	492	$700.00	$389.52	$182.98	$572.50	$518.90	$53.60	10.33%	$127.50	$181.10	249	253
13119	C/KELV N395B J ALAL V802	325	$770.00	$412.52	$136.33	$548.85	$546.86	$1.99	0.36%	$221.15	$223.14	230	283
13121	C/KELV N400H J ALAL V802	869	$808.33	$440.25	$209.70	$649.95	$600.16	$49.79	8.30%	$158.38	$208.17	291	306
13122	C/KELV F160 J WHWH V802	214	$383.33	$197.69	$142.73	$340.42	$285.56	$54.86	19.21%	$42.91	$97.77	48	36
13123	C/KELV F230 J WHWH V802	81	$458.33	$237.18	$115.89	$353.07	$332.77	$20.30	6.10%	$105.26	$125.56	64	82
13124	C/KELV F310 J WHWH V802	500	$541.67	$308.62	$96.61	$405.23	$395.35	$9.88	2.50%	$136.44	$146.32	108	135
13125	C/FRIG F160 J WHWH V802	100	$383.33	$197.59	$148.65	$346.24	$285.37	$60.87	21.33%	$37.09	$97.96	55	35
13126	C/FRIG F230 J WHWH V802	21	$458.33	$237.07	$124.35	$361.42	$332.58	$28.84	8.67%	$96.91	$125.75	76	81
13127	C/FRIG F310 J WHWH V802	47	$541.67	$308.17	$105.48	$413.65	$394.81	$18.84	4.77%	$128.02	$146.86	119	133
13128	C/KELV C335T J WHWH V802	1560	$551.67	$298.43	$102.52	$400.95	$408.37	($7.42)	-1.82%	$150.72	$143.30	103	153
13129	C/KELV C390T J WHWH V802	495	$630.00	$319.35	$111.91	$431.26	$431.45	($0.19)	-0.04%	$198.74	$198.55	137	184
13130	C/LEON C335T J WHWH V802	20	$551.67	$297.55	$104.44	$401.99	$406.69	($4.70)	-1.16%	$149.68	$144.98	104	152
13135	C/LEON C335T J ALAL V802	264	$551.67	$303.14	$213.31	$516.45	$413.35	$103.10	24.94%	$35.22	$138.32	209	163
13140	C/KELV C370 J WHWH V802	9	$533.33	$275.42	$94.90	$370.32	$356.55	$13.77	3.86%	$163.01	$176.78	79	113
13142	C/LEON F310 J WHWH V802	3	$541.67	$250.68	$94.98	$345.66	$333.14	$12.52	3.76%	$196.01	$208.53	54	84
13143	C/FRIG P190 J WHWH V802	9	$375.00	$182.33	$2,531.44	$2,713.77	$253.22	$2,460.55	971.70%	($2,338.77)	$121.78	312	10
13144	C/FRIG C420T J WHWH V802	10	$648.33	$329.53	$137.59	$467.12	$445.36	$21.76	4.89%	$181.21	$202.97	172	200
13145	C/KELV F310 J WHWH V810	35	$475.00	$326.02	$297.77	$623.79	$412.76	$211.03	51.13%	($148.79)	$62.24	285	161
13146	C/KELV C250T J WHWH V802	1410	$483.33	$239.34	$159.13	$398.47	$338.65	$59.82	17.66%	$84.86	$144.68	100	98
13147	C/LEON C170T J WHWH V802	18	$425.00	$206.55	$106.44	$312.99	$300.01	$12.98	4.33%	$112.01	$124.99	19	53
13148	C/LEON C390T J WHWH V802	6	$630.00	$318.48	$113.83	$432.31	$429.77	$2.54	0.59%	$197.69	$200.23	140	182
13149	C/LEON C410B J WHWH V802	8	$665.00	$351.89	$109.88	$461.77	$473.10	($11.33)	-2.39%	$203.23	$191.90	167	221
13150	C/SHACK P190 J WHWH V802	41	$375.00	$189.15	$795.48	$984.63	$262.72	$721.91	274.78%	($609.63)	$112.28	310	22
13151	C/KELV P120 J WHWH V803	40	$286.67	$151.07	$115.30	$266.37	$213.66	$52.71	24.67%	$20.30	$73.01	5	8
13152	C/LEON C250T J WHWH V802	8	$483.33	$234.99	$158.98	$393.97	$331.69	$62.28	18.78%	$89.36	$151.64	95	79
13153	C/KELV F160 J WHWH V803	19	$403.33	$198.35	$144.59	$342.94	$286.22	$56.72	19.82%	$60.39	$117.11	52	38
13154	C/KELV N405T J WHWH V803	377	$753.33	$406.79	$146.87	$553.66	$534.78	$18.88	3.53%	$199.67	$218.55	233	270
13155	C/KELV N395B J WHWH V803	98	$770.00	$415.31	$142.76	$558.07	$547.87	$10.20	1.86%	$211.93	$222.13	237	286
13157	C/KELV C335T J WHWH V803	112	$551.67	$270.16	$114.16	$384.32	$378.03	$6.29	1.66%	$167.35	$173.64	85	128
13158	C/SHACK P120 H WWWW V802	84	$286.67	$160.26	$1,163.96	$1,324.22	$222.75	$1,101.47	494.49%	($1,037.55)	$63.92	311	9
13159	C/SHACK C170T H WWWW V802	124	$425.00	$215.82	$449.71	$665.53	$309.79	$355.74	114.83%	($240.53)	$115.21	297	69
13160	C/SHACK C250T H WWWW V802	108	$483.33	$249.07	$660.87	$909.94	$347.54	$562.40	161.82%	($426.61)	$135.79	308	106
13161	C/SHACK C270 H WWWW V802	29	$446.67	$231.99	$752.39	$984.38	$306.01	$678.37	221.68%	($537.71)	$140.66	309	64
13162	C/SHACK C335T H WWWW V802	148	$551.67	$303.02	$140.16	$443.18	$411.60	$31.58	7.67%	$108.49	$140.07	148	157
13163	C/SHACK C370 H WWWW V802	73	$533.33	$279.52	$123.98	$403.50	$358.43	$45.07	12.57%	$129.83	$174.90	106	116
13164	C/SHACK C380B H WWWW V802	114	$646.67	$349.39	$144.36	$493.75	$469.06	$24.69	5.26%	$152.92	$177.61	187	217
13165	C/SHACK C390T H WWWW V802	149	$630.00	$323.89	$151.80	$475.69	$435.76	$39.93	9.16%	$154.31	$194.24	178	191
13166	C/SHACK C410B H WWWW V802	81	$665.00	$355.29	$141.20	$496.49	$475.80	$20.69	4.35%	$168.51	$189.20	190	225
13167	C/SHACK F230 H WWWW V802	29	$458.33	$245.27	$649.97	$895.24	$343.24	$552.00	160.82%	($436.91)	$115.09	306	104
13168	C/SHACK F310 H WWWW V802	140	$541.67	$309.48	$117.91	$427.39	$395.14	$32.25	8.16%	$114.28	$146.53	132	134
13169	C/SHACK N375T H WWWW V802	497	$700.00	$386.60	$166.60	$553.20	$513.51	$39.69	7.73%	$146.80	$186.49	232	247
13170	C/SHACK N395B H WWWW V802	13	$770.00	$415.45	$158.06	$573.51	$548.03	$25.48	4.65%	$196.49	$221.97	251	287
13173	C/FRIG N395B J ALAL V802	8	$770.00	$412.05	$158.17	$570.22	$547.85	$22.37	4.08%	$199.78	$222.15	246	285
13176	C/SHACK C250T J FAFA V802	542	$483.33	$233.37	$178.31	$411.68	$333.17	$78.51	23.56%	$71.65	$150.16	115	85

Appendix No. 1 LISTING OF ALL PART NUMBERS

PART NUMBER	DESCRIPTION	FCAST USAGE	SELLING PRICE	MATL COSTS	ABC COST	TOTAL ABC	RAW STD F&P COST	DIFFERENCE ABC - F&P	PERCENT DIFFERENCE	MARGIN ABC	MARGIN F&P	ABC RANK	F&P RANK
13177	C/SHACK C170T J FAFA V802	262	$425.00	$208.25	$111.14	$319.39	$304.78	$14.61	4.79%	$105.61	$120.22	26	61
13179	C/FRIG C380B J WHWH V802	54	$646.67	$345.42	$121.71	$467.13	$467.86	($0.73)	-0.16%	$179.54	$178.81	173	215
13180	C/FRIG C410B J WHWH V802	36	$665.00	$352.32	$120.98	$473.30	$475.46	($2.16)	-0.45%	$191.70	$189.54	177	224
13181	C/KELV C365H J WHWH V802	37	$613.33	$315.29	$163.40	$478.69	$426.23	$52.46	12.31%	$134.64	$187.10	179	176
13182	C/KELV C170T J WHWH V803	51	$425.00	$211.83	$115.33	$327.16	$306.32	$20.84	6.80%	$97.84	$118.68	38	65
13183	C/KELV C250T J WHWH V803	48	$483.33	$235.51	$169.35	$404.86	$334.82	$70.04	20.92%	$78.47	$148.51	107	89
13184	C/SHACK C190 H WWWW V802	47	$375.00	$200.75	$482.12	$682.87	$268.94	$413.93	153.91%	($307.87)	$106.06	302	28
13186	C/KELV C380B J WHWH V803	82	$646.67	$319.84	$119.85	$439.69	$439.52	$0.17	0.04%	$206.98	$207.15	144	195
13187	C/KELV N375T J WHWH V803	492	$700.00	$392.49	$137.18	$529.67	$519.15	$10.52	2.03%	$170.33	$180.85	219	254
13188	C/KELV C410B J WHWH V803	54	$665.00	$350.60	$118.74	$469.34	$470.84	($1.50)	-0.32%	$195.66	$194.16	174	218
13189	C/KELV N400H J WHWH V803	435	$808.33	$439.58	$178.70	$618.28	$595.55	$22.73	3.82%	$190.05	$212.78	284	304
13190	C/KELV F310 J WHWH V803	3	$541.67	$312.54	$97.85	$410.39	$399.27	$11.12	2.79%	$131.28	$142.40	113	147
13191	C/KELV C420T J WHWH V802	122	$648.33	$330.48	$120.96	$451.44	$445.19	$6.25	1.40%	$196.89	$203.14	156	199
13195	C/LEON C370 J WHWH V802	3	$533.33	$275.42	$97.05	$372.47	$356.55	$15.92	4.47%	$160.86	$176.78	81	114
13198	C/KELV C190 J WHWH V802	181	$375.00	$191.05	$84.83	$275.88	$258.66	$17.22	6.66%	$99.12	$116.34	10	14
13199	C/KELV C270 J WHWH V802	123	$446.67	$223.50	$107.56	$331.06	$298.56	$32.50	10.89%	$115.61	$148.11	43	49
13200	C/SHACK C420T H WWWW V802	30	$648.33	$333.10	$164.14	$497.24	$446.49	$50.75	11.37%	$151.09	$201.84	191	201
13201	C/SHACK N400H H WWWW V802	875	$808.33	$433.31	$222.75	$656.06	$584.02	$72.04	12.34%	$152.27	$224.31	293	297
13202	C/SHACK N395B J ALAL V802	5	$770.00	$405.28	$149.83	$555.11	$541.48	$13.63	2.52%	$214.89	$228.52	236	275
13203	C/SHACK N405T J ALAL V802	377	$753.33	$406.48	$173.96	$580.44	$543.07	$37.37	6.88%	$172.89	$210.26	257	280
13205	C/F&P N369B H WWWW	641	$930.71	$397.18	$157.10	$554.28	$510.54	$43.74	8.57%	$376.43	$420.17	235	242
13212	C/LEON C365H J WHWH V802	5	$613.33	$312.42	$128.52	$440.94	$422.84	$18.10	4.28%	$172.39	$190.49	145	171
13215	C/KELV N375T J SASA V802	369	$700.00	$388.14	$202.61	$590.75	$517.38	$73.37	14.18%	$109.25	$182.62	266	252
13216	C/KELV N395B J SASA V802	263	$770.00	$412.49	$170.65	$583.14	$546.70	$36.44	6.67%	$186.86	$223.30	260	282
13217	C/KELV N405T J SASA V802	315	$753.33	$401.22	$230.09	$631.31	$531.93	$99.38	18.68%	$122.02	$221.40	287	267
13218	C/KELV N400H J SASA V802	725	$808.33	$437.51	$225.82	$663.33	$597.28	$66.05	11.06%	$145.00	$211.05	295	305
13220	C/FRIG N395B J SASA V802	12	$770.00	$412.02	$192.48	$604.50	$547.69	$56.81	10.37%	$165.50	$222.31	275	284
13223	C/LEON C380B J WHWH V802	6	$646.67	$322.28	$110.22	$432.50	$442.80	($10.30)	-2.33%	$214.17	$203.87	141	197
13226	C/SHACK F230 H WWWW V803	16	$458.33	$247.04	$651.82	$898.86	$342.60	$556.26	162.36%	($440.53)	$115.73	307	103
13227	C/FRIG C190 J WHWH V802	17	$375.00	$191.88	$102.22	$294.10	$259.00	$35.10	13.55%	$80.90	$116.00	14	16
13228	C/KELV N375T J WHWH V814	39	$533.33	$391.19	$124.84	$516.03	$519.50	($3.47)	-0.67%	$17.30	$13.83	207	255
13229	C/KELV N405T J WHWH V814	3	$580.00	$404.28	$135.20	$539.48	$534.05	$5.43	1.02%	$40.52	$45.95	226	268
13230	C/KELV N400H J WHWH V814	46	$663.33	$436.56	$165.42	$601.98	$594.33	$7.65	1.29%	$61.35	$69.00	273	303
13231	C/KELV N375T J ALAL V814	35	$533.33	$396.77	$183.20	$579.97	$526.16	$53.81	10.23%	($46.64)	$7.17	255	261
13232	C/KELV N405T J ALAL V814	2	$663.33	$409.86	$162.35	$572.21	$540.71	$31.50	5.83%	$91.12	$122.62	248	273
13233	C/KELV N400H J ALAL V814	45	$663.33	$447.50	$209.91	$657.41	$607.41	$50.00	8.23%	$5.92	$55.92	294	312
13234	C/KELV N375T J SASA V814	15	$533.33	$395.40	$202.83	$598.23	$524.64	$73.59	14.03%	($64.90)	$8.69	270	259
13235	C/KELV N405T J SASA V814	2	$580.00	$408.48	$230.31	$638.79	$539.19	$99.60	18.47%	($58.79)	$40.81	289	272
13236	C/KELV N400H J SASA V814	17	$663.33	$444.77	$226.04	$670.81	$604.53	$66.28	10.96%	($7.48)	$58.80	298	309
13242	C/FRIG N400H J ALAL V814	12	$741.67	$446.89	$255.17	$702.06	$607.12	$94.94	15.64%	$39.61	$134.55	303	311
13245	C/FRIG N400H J SASA V814	18	$741.67	$444.16	$271.30	$715.46	$604.24	$111.22	18.41%	$26.21	$137.43	304	308
13248	C/LEON N375T J ALAL V814	50	$591.66	$395.97	$185.08	$581.05	$524.55	$56.50	10.77%	$10.61	$67.11	258	258
13252	C/LEON C250T J FAFA V802	30	$483.33	$228.34	$160.94	$389.28	$325.04	$64.24	19.76%	$94.05	$158.29	90	77
13253	C/LEON C335T J SASA V802	152	$551.67	$301.76	$148.63	$450.39	$411.83	$38.56	9.36%	$101.28	$139.84	155	160
13254	C/LEON N400H J SASA V814	45	$808.33	$444.45	$228.28	$672.73	$604.17	$68.56	11.35%	$135.60	$204.16	300	307
13255	C/LEON N375T J SASA V814	45	$700.00	$394.59	$204.71	$599.30	$523.03	$76.27	14.58%	$100.70	$176.97	271	257
13257	C/KELV F310 J ALAL V802	5	$541.67	$308.84	$187.39	$496.23	$395.57	$100.66	25.45%	$45.44	$146.10	189	136
13258	C/SHACK N395B J SASA V802	5	$770.00	$405.26	$184.14	$589.40	$541.32	$48.08	8.88%	$180.60	$228.68	264	274
13259	C/SHACK N375T H WWWW V814	5	$700.00	$393.86	$166.81	$560.67	$520.77	$39.90	7.66%	$139.33	$179.23	240	256
13260	C/SHACK N405T H WWWW V814	8	$753.33	$403.63	$176.80	$580.43	$530.31	$50.12	9.45%	$172.90	$223.02	256	266

Appendix No. 1

LISTING OF ALL PART NUMBERS

PART NUMBER	DESCRIPTION	FCAST USAGE	SELLING PRICE	MATL COSTS	ABC COST	TOTAL ABC	RAW STD F&P COST	DIFFERENCE ABC - F&P	PERCENT DIFFERENCE	MARGIN ABC	MARGIN F&P	ABC RANK	F&P RANK
13261	C/SHACK N400H H WWWW V814	8	$808.33	$440.56	$222.96	$663.52	$591.28	$72.24	12.22%	$144.81	$217.05	296	302
13262	C/SHACK N375T J ALAL V814	2	$700.00	$394.78	$192.49	$587.27	$526.02	$61.25	11.64%	$112.73	$173.98	262	260
13263	C/SHACK N405T J ALAL V814	6	$753.33	$413.74	$174.17	$587.91	$550.33	$37.58	6.83%	$165.42	$203.00	263	289
13264	C/SHACK N400H J ALAL V814	6	$808.33	$407.89	$198.55	$606.44	$553.04	$53.40	9.66%	$201.89	$255.29	279	290
13265	C/SHACK N375T J SASA V814	3	$700.00	$393.40	$212.11	$605.51	$583.97	$21.54	3.69%	$94.49	$116.03	277	296
13266	C/SHACK N405T J SASA V814	6	$753.33	$412.36	$242.14	$654.50	$548.81	$105.69	19.26%	$98.83	$204.52	292	288
13267	C/SHACK N400H J SASA V814	6	$808.33	$444.77	$226.04	$670.81	$604.53	$66.28	10.96%	$137.52	$203.80	299	310
15352	C/F&P N375T H WWWW	225	$924.61	$436.00	$177.05	$613.05	$573.00	$40.05	6.99%	$311.56	$351.61	282	293
15354	C/F&P N400H H WWWW	218	$1,077.49	$418.79	$217.75	$636.54	$566.88	$69.66	12.29%	$440.95	$510.61	288	292
15355	C/F&P N395B H WWWW	666	$998.05	$408.33	$153.15	$561.48	$538.51	$22.97	4.27%	$436.57	$459.54	241	271
15811	C/F&P C365H H WWWW V812	310	$689.13	$304.89	$159.24	$464.13	$405.26	$58.87	14.53%	$225.00	$283.87	168	151
15813	C/SHACK C365H J WHWH	427	$691.74	$314.48	$127.03	$441.51	$426.02	$15.49	3.64%	$250.23	$265.72	146	174
15814	C/F&P H160E J WHWH V812	1637	$336.71	$214.60	$131.84	$346.44	$296.65	$49.79	16.78%	($9.73)	$40.06	56	47
15815	C/F&P H220E J WHWH V812	1089	$397.78	$232.15	$123.33	$355.48	$317.24	$38.24	12.05%	$42.30	$80.54	66	71
15816	C/F&P H360E J WHWH V812	952	$517.28	$276.44	$141.55	$417.99	$370.16	$47.83	12.92%	$99.29	$147.12	123	121
15817	C/F&P H510E J WHWH V812	485	$681.27	$330.22	$189.28	$519.50	$426.14	$93.36	21.91%	$161.77	$255.13	212	175
15818	C/F&P H701E J WHWH V812	457	$884.53	$390.73	$211.18	$601.91	$489.10	$112.81	23.06%	$282.62	$395.43	272	229
15823	C/F&P H160S J WHWH V812	2126	$299.21	$186.52	$133.30	$319.82	$261.05	$58.77	22.51%	($20.61)	$38.16	27	21
15824	C/F&P H220S J WHWH V812	1124	$365.50	$203.43	$120.08	$323.51	$280.93	$42.58	15.16%	$41.99	$84.57	33	32
15825	C/F&P H360S J WHWH V812	948	$474.54	$247.94	$139.43	$387.37	$333.36	$54.01	16.20%	$87.17	$141.18	89	86
15826	C/FRIG F310 J SASA	129	$686.08	$310.78	$149.78	$460.56	$397.38	$63.18	15.90%	$225.52	$288.70	164	142
15827	C/FRIG C370 J SASA	167	$734.97	$273.93	$151.91	$425.84	$355.23	$70.61	19.88%	$309.13	$379.74	131	111
15828	C/FRIG C365H J SASA	42	$826.63	$315.24	$193.23	$508.47	$425.63	$82.84	19.46%	$318.16	$401.00	199	173
15829	C/FRIG C335T J SASA	20	$747.19	$303.80	$157.24	$461.04	$415.75	$45.29	10.89%	$286.15	$331.44	166	164
15830	C/FRIG C390T J SASA	6	$820.73	$324.64	$201.27	$525.91	$436.79	$89.12	20.40%	$294.82	$383.94	217	193
15831	C/FRIG C380B J SASA	325	$839.06	$342.01	$161.34	$503.35	$461.07	$42.28	9.17%	$335.71	$377.99	195	209
15834	C/FRIG C410B J SASA	11	$906.39	$349.89	$164.92	$514.81	$472.26	$42.55	9.01%	$391.58	$434.13	204	219
15836	C/KELV C365H J SASA	68	$826.63	$316.46	$162.53	$478.99	$427.29	$51.70	12.10%	$347.64	$399.34	180	177
15837	C/KELV C390T J SASA	8	$820.73	$326.52	$185.57	$512.09	$437.08	$75.01	17.16%	$308.64	$383.65	201	194
15840	C/KELV C410B J SASA	17	$906.39	$355.83	$152.54	$508.37	$477.71	$30.66	6.42%	$398.02	$428.68	198	227
15842	C/F&P F310 J WHWH V812	2376	$599.28	$309.19	$96.76	$405.95	$395.92	$10.03	2.53%	$193.33	$203.36	109	137
15843	C/F&P C370 J WHWH V812	2807	$612.36	$267.75	$93.13	$360.88	$347.09	$13.79	3.97%	$251.48	$265.27	74	105
15844	C/F&P C365H J WHWH V812	547	$689.13	$304.71	$125.00	$429.71	$413.34	$16.37	3.96%	$259.42	$275.79	134	162
15845	C/F&P C335T J WHWH V812	1827	$625.45	$290.75	$100.81	$391.56	$398.92	($7.36)	-1.84%	$233.89	$226.53	92	146
15847	C/F&P C390T J WHWH V812	2501	$689.13	$312.20	$110.27	$422.47	$422.84	($0.37)	-0.09%	$266.66	$266.29	127	172
15848	C/F&P N375T J WHWH V812	1894	$786.82	$368.21	$122.76	$490.97	$495.14	($4.17)	-0.84%	$295.85	$291.68	184	236
15849	C/F&P C380B J WHWH V812	1838	$709.19	$338.48	$107.16	$445.64	$458.35	($12.71)	-2.77%	$263.55	$250.84	152	208
15850	C/F&P C420T J WHWH V812	2011	$749.31	$323.30	$119.44	$442.74	$436.54	$6.20	1.42%	$306.57	$312.77	147	192
15852	C/F&P N405T J WHWH V812	1410	$847.01	$382.64	$133.48	$516.12	$511.03	$5.09	1.00%	$330.89	$335.98	208	244
15853	C/F&P C415H J WHWH V812	792	$824.33	$354.21	$148.44	$502.65	$494.94	$7.71	1.56%	$321.68	$329.39	194	235
15854	C/F&P N400H J WHWH V812	727	$922.03	$407.01	$163.47	$570.48	$563.16	$7.32	1.30%	$351.55	$358.87	247	291
15855	C/F&P C410B J WHWH V812	3548	$768.50	$345.29	$106.21	$451.50	$465.85	($14.35)	-3.08%	$317.00	$302.65	157	212
15856	C/F&P N395B J WHWH V812	4513	$866.21	$397.13	$119.58	$516.71	$530.10	($13.39)	-2.53%	$349.50	$336.11	210	265
15857	C/F&P P190 J WHWH V812	112	$408.24	$182.69	$385.84	$568.53	$254.11	$314.42	123.73%	($160.29)	$154.13	245	12
15858	C/F&P C190 J WHWH V812	667	$408.24	$190.15	$84.63	$274.78	$257.66	$17.12	6.64%	$133.46	$150.58	8	13
15859	C/F&P F160 J WHWH V812	832	$400.39	$198.28	$142.20	$340.48	$286.15	$54.33	18.99%	$59.91	$114.24	49	37
15860	C/F&P C170T J WHWH V812	1090	$416.09	$209.63	$105.47	$315.10	$304.33	$10.77	3.54%	$100.99	$111.76	21	60
15861	C/F&P C270 J WHWH V812	1997	$476.28	$231.58	$107.67	$339.25	$306.64	$32.61	10.63%	$137.03	$169.64	47	66
15862	C/F&P F230 J WHWH V812	1752	$471.92	$237.77	$115.22	$352.99	$333.36	$19.63	5.89%	$118.93	$138.56	63	87
15863	C/F&P C250T J WHWH V812	1977	$505.94	$238.21	$157.58	$395.79	$335.73	$60.06	17.89%	$110.15	$170.21	96	92

Appendix No. 1 **LISTING OF ALL PART NUMBERS**

PART NUMBER	DESCRIPTION			FCAST USAGE	SELLING PRICE	MATL COSTS	ABC COST	TOTAL ABC	RAW STD F&P COST	DIFFERENCE ABC - F&P	PERCENT DIFFERENCE	MARGIN ABC	MARGIN F&P	ABC RANK	F&P RANK
15864	C/F&P	C240B	J WHWH V812	2137	$505.94	$247.53	$123.18	$370.71	$360.98	$9.73	2.70%	$135.23	$144.96	80	119
15865	C/FRIG	C389T	J WHWH	68	$771.81	$312.45	$119.73	$432.18	$421.64	$10.54	2.50%	$339.63	$350.17	139	168
15866	C/KELV	C389T	J WHWH	109	$771.81	$314.06	$105.77	$419.83	$421.90	($2.07)	-0.49%	$351.98	$349.91	125	169
15867	C/SHACK	C370	J WH	40	$505.95	$199.60	$76.39	$275.99	$263.24	$12.75	4.84%	$229.96	$242.71	11	23
15869	C/SHACK	F310	J WH	20	$450.33	$219.35	$81.54	$300.89	$296.63	$4.26	1.44%	$149.44	$153.70	16	46
15870	C/SHACK	H360	J WH	35	$439.28	$216.21	$143.39	$359.60	$289.14	$70.46	24.37%	$79.68	$150.14	71	44
15871	C/SHACK	H510	J WH	5	$537.37	$255.30	$155.27	$410.57	$334.19	$76.38	22.86%	$126.80	$203.18	114	88
15872	C/F&P	N369B	H WWWW V812	1449	$806.01	$387.03	$156.67	$543.70	$499.34	$44.36	8.88%	$262.31	$306.67	227	237
15873	C/SHACK	C120	J WH	104	$281.95	$128.87	$76.81	$205.68	$180.97	$24.71	13.65%	$76.27	$100.98	1	1
15874	C/F&P	P120	J WHWH V812	168	$295.72	$150.19	$109.00	$259.19	$212.78	$46.41	21.81%	$36.53	$82.94	4	6
15875	C/KELV	N369B	J SASA	180	$930.71	$397.62	$166.38	$564.00	$515.19	$48.81	9.47%	$366.71	$415.52	242	249
15876	C/FRIG	N369B	J SASA	120	$835.16	$396.80	$178.13	$574.93	$515.83	$59.10	11.46%	$260.23	$319.33	253	251
				195199	$193,281.91	$95,080.22	$53,489.55	$148,569.77	$127,739.81	$20,829.96		$44,712.14	$65,542.10		

Appendix No. 2 **A RANKING OF PRODUCTS IN PROFITABILITY ORDER.**

PART No.	DESCRIPTION	EXP OR LOC	FCAST USAGE	SELLING PRICE	TOTAL ABC COST	STD F & P COST	DIFF	% DIFF	MARGIN ABC	MARGIN F & P	ABC RANK	F & P RANK	VAR RANK
12960	C/KELV N400H J WHWH	L	1375	$1,053.05	$577.67	$574.61	$3.06	0.53%	$475.38	$478.44	1	5	4
12961	C/KELV N395B J WHWH	L	3440	$973.61	$524.48	$541.88	($17.40)	-3.21%	$449.13	$431.73	2	13	11
15354	C/F&P N400H H WWWW	L	218	$1,077.49	$636.54	$566.88	$69.66	12.29%	$440.95	$510.61	3	1	2
12894	C/FRIG N400H J WHWH	L	838	$1,053.05	$612.83	$573.97	$38.86	6.77%	$440.22	$479.08	4	4	0
12953	C/FRIG N395B J WHWH	L	1817	$973.61	$536.53	$542.65	($6.12)	-1.13%	$437.08	$430.96	5	14	9
15355	C/F&P N395B H WWWW	L	666	$998.05	$561.48	$538.51	$22.97	4.27%	$436.57	$459.54	6	6	0
12879	C/KELV N400H J SASA	L	14	$1,077.49	$647.02	$584.82	$62.20	10.64%	$430.47	$492.67	7	3	4
12881	C/KELV N395B J SASA	L	377	$998.05	$574.26	$541.94	$32.32	5.96%	$423.79	$456.11	8	7	1
12880	C/KELV C410B J WHWH	L	1482	$881.95	$459.11	$477.66	($18.55)	-3.88%	$422.84	$404.29	9	21	12
13047	C/F&P C410B H WWWW	L	226	$906.39	$492.36	$473.98	$18.38	3.88%	$414.03	$432.41	10	12	2
12867	C/FRIG N395B J SASA	L	203	$998.05	$584.64	$542.04	$42.60	7.86%	$413.41	$456.01	11	8	3
12866	C/FRIG C410B J WHWH	L	913	$881.95	$471.01	$478.33	($7.32)	-1.53%	$410.94	$403.62	12	22	10
12957	C/KELV N375T J WHWH	L	1115	$900.16	$499.43	$507.64	($8.21)	-1.62%	$400.73	$392.52	13	27	14
15840	C/KELV C410B J SASA	L	17	$906.39	$508.37	$477.71	$30.66	6.42%	$398.02	$428.68	14	15	1
12865	C/FRIG N400H J SASA	L	8	$1,077.49	$681.49	$584.43	$97.06	16.61%	$396.00	$493.06	15	2	13
15834	C/FRIG C410B J SASA	L	11	$906.39	$514.81	$472.26	$42.55	9.01%	$391.58	$434.13	16	11	5
12884	C/FRIG N375T J WHWH	L	686	$900.16	$512.11	$505.32	$6.79	1.34%	$388.05	$394.84	17	26	9
13067	C/KELV N369B J WHWH	L	1689	$906.27	$518.27	$515.13	$3.14	0.61%	$388.00	$391.14	18	28	10
13070	C/FRIG N369B J WHWH	L	1123	$906.27	$529.66	$515.35	$14.31	2.78%	$376.61	$390.92	19	29	10
13205	C/F&P N369B H WWWW	L	641	$930.71	$554.28	$510.54	$43.74	8.57%	$376.43	$420.17	20	16	4
12870	C/KELV C365H J WHWH	L	690	$802.18	$430.60	$422.15	$8.45	2.00%	$371.58	$380.03	21	36	15
15875	C/KELV N369B J SASA	L	180	$930.71	$564.00	$515.19	$48.81	9.47%	$366.71	$415.52	22	17	5
12873	C/KELV C390T J WHWH	L	1030	$796.28	$429.89	$431.94	($2.05)	-0.47%	$366.39	$364.34	23	42	19
12958	C/KELV C380B J WHWH	L	4986	$814.61	$452.99	$467.68	($14.69)	-3.14%	$361.62	$346.93	24	51	27
13041	C/F&P C365H H WWWW	L	180	$826.63	$466.81	$411.64	$55.17	13.40%	$359.82	$414.99	25	18	7
12859	C/FRIG C390T J WHWH	L	636	$796.28	$443.95	$431.54	$12.41	2.88%	$352.33	$364.74	26	41	15
15866	C/KELV C389T J WHWH	L	109	$771.81	$419.83	$421.90	($2.07)	-0.49%	$351.98	$349.91	27	48	21
15854	C/F&P N400H J WHWH V812	E	727	$922.03	$570.48	$563.16	$7.32	1.30%	$351.55	$358.87	28	43	15
12861	C/FRIG C380B J WHWH	L	3062	$814.61	$464.89	$468.35	($3.46)	-0.74%	$349.72	$346.26	29	53	24
12955	C/KELV C370 J WHWH	L	2705	$710.52	$360.92	$354.35	$6.57	1.85%	$349.60	$356.17	30	44	14
13044	C/F&P C380B H WWWW	L	1057	$839.06	$489.53	$464.77	$24.76	5.33%	$349.53	$374.29	31	39	8
15856	C/F&P N395B J WHWH V812	E	4513	$866.21	$516.71	$530.10	($13.39)	-2.53%	$349.50	$336.11	32	56	24
13043	C/F&P C390T H WWWW	L	166	$820.73	$471.67	$431.47	$40.20	9.32%	$349.06	$389.26	33	30	3
15836	C/KELV C365H J SASA	L	68	$826.63	$478.99	$427.29	$51.70	12.10%	$347.64	$399.34	34	24	10
12874	C/KELV N375T J SASA	L	12	$924.61	$581.62	$512.78	$68.84	13.42%	$342.99	$411.83	35	20	15
12856	C/FRIG C365H J WHWH	L	429	$802.18	$460.37	$420.34	$40.03	9.52%	$341.81	$381.84	36	33	3
12875	C/KELV C380B J SASA	L	532	$839.06	$498.71	$467.74	$30.97	6.62%	$340.35	$371.32	37	40	3
15865	C/FRIG C389T J WHWH	L	68	$771.81	$432.18	$421.64	$10.54	2.50%	$339.63	$350.17	38	47	9
13040	C/F&P C370 H WWWW	L	371	$734.97	$396.04	$353.96	$42.08	11.89%	$338.93	$381.01	39	34	5
12855	C/FRIG C370 J WHWH	L	1656	$710.52	$372.50	$355.01	$17.49	4.93%	$338.02	$355.51	40	45	5
15831	C/FRIG C380B J SASA	L	325	$839.06	$503.35	$461.07	$42.28	9.17%	$335.71	$377.99	41	38	3
15852	C/F&P N405T J WHWH V812	E	1410	$847.01	$516.12	$511.03	$5.09	1.00%	$330.89	$335.98	42	57	15
12860	C/FRIG N375T J SASA	L	8	$924.61	$593.81	$510.80	$83.01	16.25%	$330.80	$413.81	43	19	24
13018	C/KELV H701E J WHWH	L	273	$932.71	$602.04	$491.38	$110.66	22.52%	$330.67	$441.33	44	10	34
13028	C/FRIG H701E J WHWH	L	185	$932.71	$608.47	$491.06	$117.41	23.91%	$324.24	$441.65	45	9	36
12956	C/KELV C335T J WHWH	L	2607	$722.75	$399.44	$411.34	($11.90)	-2.89%	$323.31	$311.41	46	65	19
15853	C/F&P C415H J WHWH V812	E	792	$824.33	$502.65	$494.94	$7.71	1.56%	$321.68	$329.39	47	60	13

Appendix No. 2 A RANKING OF PRODUCTS IN PROFITABILITY ORDER.

PART No.	DESCRIPTION	EXP OR LOC	FCAST USAGE	SELLING PRICE	TOTAL ABC COST	STD F & P COST	DIFF	% DIFF	MARGIN ABC	MARGIN F & P	ABC RANK	F & P RANK	VAR RANK
12869	C/KELV C370 J SASA	L	275	$734.97	$414.68	$354.50	$60.18	16.98%	$320.29	$380.47	48	35	13
15828	C/FRIG C365H J SASA	L	42	$826.63	$508.47	$425.63	$82.84	19.46%	$318.16	$401.00	49	23	26
15855	C/F&P C410B J WHWH V812	E	3548	$768.50	$451.50	$465.85	($14.35)	-3.08%	$317.00	$302.65	50	69	19
12906	C/F&P N395B H WWWW V812	E	1355	$866.21	$551.65	$528.64	$23.01	4.35%	$314.56	$337.57	51	54	3
15352	C/F&P N375T H WWWW	L	225	$924.61	$613.05	$573.00	$40.05	6.99%	$311.56	$351.61	52	46	6
15827	C/FRIG C370 J SASA	L	167	$734.97	$425.84	$355.23	$70.61	19.88%	$309.13	$379.74	53	37	16
15837	C/KELV C390T J SASA	L	8	$820.73	$512.09	$437.08	$75.01	17.16%	$308.64	$383.65	54	32	22
12857	C/FRIG C335T J WHWH	L	1610	$722.75	$414.44	$411.83	$2.61	0.63%	$308.31	$310.92	55	66	11
13042	C/F&P C335T H WWWW	L	322	$747.19	$439.01	$409.78	$29.23	7.13%	$308.18	$337.41	56	55	1
12896	C/SHACK N395B J WHWH	L	1085	$839.05	$531.02	$534.35	($3.33)	-0.62%	$308.03	$304.70	57	68	11
15850	C/F&P C420T J WHWH V812	E	2011	$749.31	$442.74	$436.54	$6.20	1.42%	$306.57	$312.77	58	63	5
12892	C/SHACK N405T J WHWH	L	470	$839.05	$537.04	$527.12	$9.92	1.88%	$302.01	$311.93	59	64	5
12914	C/F&P N405T H WWWW V812	E	413	$847.01	$546.06	$500.37	$45.69	9.13%	$300.95	$346.64	60	52	8
12871	C/KELV C335T J SASA	L	30	$747.19	$447.83	$416.47	$31.36	7.53%	$299.36	$330.72	61	59	2
15848	C/F&P N375T J WHWH V812	E	1894	$786.82	$490.97	$495.14	($4.17)	-0.84%	$295.85	$291.68	62	70	8
15830	C/FRIG C390T J SASA	L	6	$820.73	$525.91	$436.79	$89.12	20.40%	$294.82	$383.94	63	31	32
12895	C/SHACK C410B J WHWH	L	821	$760.87	$466.23	$472.70	($6.47)	-1.37%	$294.64	$288.17	64	74	10
15829	C/FRIG C335T J SASA	L	20	$747.19	$461.04	$415.75	$45.29	10.89%	$286.15	$331.44	65	58	7
15818	C/F&P H701E J WHWH V812	E	457	$884.53	$601.91	$489.10	$112.81	23.06%	$282.62	$395.43	66	25	41
12888	C/SHACK N375T J WHWH	L	372	$776.00	$507.82	$507.49	$0.33	0.07%	$268.18	$268.51	67	79	12
15847	C/F&P C390T J WHWH V812	E	2501	$689.13	$422.47	$422.84	($0.37)	-0.09%	$266.66	$266.29	68	80	12
15849	C/F&P C380B J WHWH V812	E	1838	$709.19	$445.64	$458.35	($12.71)	-2.77%	$263.55	$250.84	69	90	21
13027	C/FRIG H510E J WHWH	L	351	$778.04	$514.82	$428.26	$86.56	20.21%	$263.22	$349.78	70	49	21
13039	C/F&P F310 H WWWW	L	358	$686.08	$423.73	$397.20	$26.53	6.68%	$262.35	$288.88	71	71	0
15872	C/F&P N369B H WWWW V812	E	1449	$806.01	$543.70	$499.34	$44.36	8.88%	$262.31	$306.67	72	67	5
15876	C/FRIG N369B J SASA	L	120	$835.16	$574.93	$515.83	$59.10	11.46%	$260.23	$319.33	73	61	12
15844	C/F&P C365H J WHWH V812	E	547	$689.13	$429.71	$413.34	$16.37	3.96%	$259.42	$275.79	74	77	3
12954	C/KELV F310 J WHWH	L	1931	$661.64	$402.92	$397.53	$5.39	1.36%	$258.72	$264.11	75	85	10
13017	C/KELV H510E J WHWH	L	518	$778.04	$519.58	$428.42	$91.16	21.28%	$258.46	$349.62	76	50	26
12854	C/FRIG F310 J WHWH	L	1228	$661.64	$407.06	$397.04	$10.02	2.52%	$254.58	$264.60	77	84	7
15843	C/F&P C370 J WHWH V812	E	2807	$612.36	$360.88	$347.09	$13.79	3.97%	$251.48	$265.27	78	83	5
15813	C/SHACK C365H J WHWH	L	427	$691.74	$441.51	$426.02	$15.49	3.64%	$250.23	$265.72	79	82	3
12887	C/SHACK C390T J WHWH	L	417	$687.40	$438.58	$432.05	$6.53	1.51%	$248.82	$255.35	80	86	6
12889	C/SHACK C380B J WHWH	L	2313	$703.03	$459.85	$462.55	($2.70)	-0.58%	$243.18	$240.48	81	96	15
12883	C/SHACK C370 J WHWH	L	1898	$613.55	$376.60	$360.95	$15.65	4.34%	$236.95	$252.60	82	89	7
13115	C/KELV N395B J WHWH V802	E	372	$770.00	$533.89	$546.64	($12.75)	-2.33%	$236.11	$223.36	83	109	26
15845	C/F&P C335T J WHWH V812	E	1827	$625.45	$391.56	$398.92	($7.36)	-1.84%	$233.89	$226.53	84	106	22
15867	C/SHACK C370 J WH	L	40	$505.95	$275.99	$263.24	$12.75	4.84%	$229.96	$242.71	85	95	10
12868	C/KELV F310 J SASA	L	201	$686.08	$456.68	$397.68	$59.00	14.84%	$229.40	$288.40	86	73	13
15826	C/FRIG F310 J SASA	L	129	$686.08	$460.56	$397.38	$63.18	15.90%	$225.52	$288.70	87	72	15
15811	C/F&P C365H H WWWW V812	E	310	$689.13	$464.13	$405.26	$58.87	14.53%	$225.00	$283.87	88	76	12
12966	C/KELV C270 J WHWH	L	1339	$542.93	$321.24	$296.66	$24.58	8.29%	$221.69	$246.27	89	93	4
13116	C/KELV N405T J WHWH V802	E	189	$753.33	$532.01	$526.80	$5.21	0.99%	$221.32	$226.53	90	105	15
13119	C/KELV N395B J ALAL V802	E	325	$770.00	$548.85	$546.86	$1.99	0.36%	$221.15	$223.14	91	112	21
13065	C/KELV C229 J WHWH	L	1650	$526.60	$308.28	$303.34	$4.94	1.63%	$218.32	$223.26	92	111	19
13103	C/KELV C380B J WHWH V802	E	299	$646.67	$431.46	$444.49	($13.03)	-2.93%	$215.21	$202.18	93	148	55
13202	C/SHACK N395B J ALAL V802	E	5	$770.00	$555.11	$541.48	$13.63	2.52%	$214.89	$228.52	94	103	9

Appendix No. 2 **A RANKING OF PRODUCTS IN PROFITABILITY ORDER.**

PART No.	DESCRIPTION	EXP OR LOC	FCAST USAGE	SELLING PRICE	TOTAL ABC COST	STD F & P COST	DIFF	% DIFF	MARGIN ABC	MARGIN F & P	ABC RANK	F & P RANK	VAR RANK
13223	C/LEON C380B J WHWH V802	E	6	$646.67	$432.50	$442.80	($10.30)	-2.33%	$214.17	$203.87	95	141	46
13117	C/KELV N400H J WHWH V802	E	10	$808.33	$594.51	$587.07	$7.44	1.27%	$213.82	$221.26	96	123	27
13155	C/KELV N395B J WHWH V803	E	98	$770.00	$558.07	$547.87	$10.20	1.86%	$211.93	$222.13	97	117	20
12885	C/SHACK C335T J WHWH	L	1324	$623.98	$412.15	$415.95	($3.80)	-0.91%	$211.83	$208.03	98	135	37
13068	C/FRIG C229 J WHWH	L	935	$526.60	$318.39	$304.03	$14.36	4.72%	$208.21	$222.57	99	114	15
12968	C/KELV C240B J WHWH	L	4076	$573.71	$366.17	$361.42	$4.75	1.31%	$207.54	$212.29	100	130	30
13186	C/KELV C380B J WHWH V803	E	82	$646.67	$439.69	$439.52	$0.17	0.04%	$206.98	$207.15	101	136	35
13104	C/KELV C410B J WHWH V802	E	202	$665.00	$460.59	$474.69	($14.10)	-2.97%	$204.41	$190.31	102	157	55
13149	C/LEON C410B J WHWH V802	E	8	$665.00	$461.77	$473.10	($11.33)	-2.39%	$203.23	$191.90	103	155	52
13023	C/SHACK H701E J WHWH	L	195	$808.49	$605.49	$491.78	$113.71	23.12%	$203.00	$316.71	104	62	42
13264	C/SHACK N400H J ALAL V814	E	6	$808.33	$606.44	$553.04	$53.40	9.66%	$201.89	$255.29	105	87	18
13173	C/FRIG N395B J ALAL V802	E	8	$770.00	$570.22	$547.85	$22.37	4.08%	$199.78	$222.15	106	116	10
13154	C/KELV N405T J WHWH V803	E	377	$753.33	$553.66	$534.78	$18.88	3.53%	$199.67	$218.55	107	124	17
12975	C/FRIG C270 J WHWH	L	804	$542.93	$343.42	$296.48	$46.94	15.83%	$199.51	$246.45	108	92	16
12969	C/KELV F230 J WHWH	L	1427	$549.09	$350.15	$335.74	$14.41	4.29%	$198.94	$213.35	109	127	18
13129	C/KELV C390T J WHWH V802	E	495	$630.00	$431.26	$431.45	($0.19)	-0.04%	$198.74	$198.55	110	151	41
13148	C/LEON C390T J WHWH V802	E	6	$630.00	$432.31	$429.77	$2.54	0.59%	$197.69	$200.23	111	150	39
13191	C/KELV C420T J WHWH V802	E	122	$648.33	$451.44	$445.19	$6.25	1.40%	$196.89	$203.14	112	145	33
13170	C/SHACK N395B H WWWW V802	E	13	$770.00	$573.51	$548.03	$25.48	4.65%	$196.49	$221.97	113	118	5
13142	C/LEON F310 J WHWH V802	E	3	$541.67	$345.66	$333.14	$12.52	3.76%	$196.01	$208.53	114	133	19
13188	C/KELV C410B J WHWH V803	E	54	$665.00	$469.34	$470.84	($1.50)	-0.32%	$195.66	$194.16	115	154	39
12963	C/KELV C190 J WHWH	L	2205	$465.95	$271.35	$259.40	$11.95	4.61%	$194.60	$206.55	116	138	22
15842	C/F&P F310 J WHWH V812	E	2376	$599.28	$405.95	$395.92	$10.03	2.53%	$193.33	$203.36	117	143	26
12978	C/FRIG F230 J WHWH	L	973	$549.09	$357.10	$335.50	$21.60	6.44%	$191.99	$213.59	118	126	8
13180	C/FRIG C410B J WHWH V802	E	36	$665.00	$473.30	$475.46	($2.16)	-0.45%	$191.70	$189.54	119	158	39
13114	C/KELV N375T J WHWH V802	E	621	$700.00	$508.56	$512.25	($3.69)	-0.72%	$191.44	$187.75	120	160	40
13189	C/KELV N400H J WHWH V803	E	435	$808.33	$618.28	$595.55	$22.73	3.82%	$190.05	$212.78	121	129	8
12977	C/FRIG C240B J WHWH	L	2512	$573.71	$385.43	$360.70	$24.73	6.86%	$188.28	$213.01	122	128	6
13216	C/KELV N395B J SASA V802	E	263	$770.00	$583.14	$546.70	$36.44	6.67%	$186.86	$223.30	123	110	13
13109	C/FRIG C390T J WHWH V802	E	61	$630.00	$446.74	$431.95	$14.79	3.42%	$183.26	$198.05	124	152	28
13144	C/FRIG C420T J WHWH V802	E	10	$648.33	$467.12	$445.36	$21.76	4.89%	$181.21	$202.97	125	147	22
13258	C/SHACK N395B J SASA V802	E	5	$770.00	$589.40	$541.32	$48.08	8.88%	$180.60	$228.68	126	102	24
13016	C/KELV H360E J WHWH	L	2012	$598.87	$418.42	$372.44	$45.98	12.35%	$180.45	$226.43	127	107	20
13179	C/FRIG C380B J WHWH V802	E	54	$646.67	$467.13	$467.86	($0.73)	-0.16%	$179.54	$178.81	128	169	41
13113	C/FRIG N400H J WHWH V802	E	3	$808.33	$629.53	$586.43	$43.10	7.35%	$178.80	$221.90	129	119	10
12971	C/FRIG C190 J WHWH	L	1369	$465.95	$287.64	$259.28	$28.36	10.94%	$178.31	$206.67	130	137	7
12967	C/KELV C250T J WHWH	L	1316	$573.71	$396.38	$341.61	$54.77	16.03%	$177.33	$232.10	131	100	31
13026	C/FRIG H360E J WHWH	L	1390	$598.87	$423.67	$372.28	$51.39	13.80%	$175.20	$226.59	132	104	28
13260	C/SHACK N405T H WWWW V814	E	8	$753.33	$580.43	$530.31	$50.12	9.45%	$172.90	$223.02	133	113	20
13203	C/SHACK N405T J ALAL V802	E	377	$753.33	$580.44	$543.07	$37.37	6.88%	$172.89	$210.26	134	132	2
13212	C/LEON C365H J WHWH V802	E	5	$613.33	$440.94	$422.84	$18.10	4.28%	$172.39	$190.49	135	156	21
12965	C/KELV C170T J WHWH	L	3835	$484.55	$312.31	$306.70	$5.61	1.83%	$172.24	$177.85	136	170	34
13187	C/KELV N375T J WHWH V803	E	492	$700.00	$529.67	$519.15	$10.52	2.03%	$170.33	$180.85	137	166	29
13166	C/SHACK C410B H WWWW V802	E	81	$665.00	$496.49	$475.80	$20.69	4.35%	$168.51	$189.20	138	159	21
13157	C/KELV C335T J WHWH V803	E	112	$551.67	$384.32	$378.03	$6.29	1.66%	$167.35	$173.64	139	177	38
13220	C/FRIG N395B J SASA V802	E	12	$770.00	$604.50	$547.69	$56.81	10.37%	$165.50	$222.31	140	115	25
13263	C/SHACK N405T J ALAL V814	E	6	$753.33	$587.91	$550.33	$37.58	6.83%	$165.42	$203.00	141	146	5

Appendix No. 2 A RANKING OF PRODUCTS IN PROFITABILITY ORDER.

PART No.	DESCRIPTION	EXP OR LOC	FCAST USAGE	SELLING PRICE	TOTAL ABC COST	STD F & P COST	DIFF	% DIFF	MARGIN ABC	MARGIN F & P	ABC RANK	F & P RANK	VAR RANK
12521	C/SHACK H701SL J WHWH V810	E	1175	$737.50	$572.73	$450.65	$122.08	27.09%	$164.77	$286.85	142	75	67
12976	C/FRIG C250T J WHWH	L	788	$573.71	$409.64	$337.91	$71.73	21.23%	$164.07	$235.80	143	97	46
13140	C/KELV C370 J WHWH V802	E	9	$533.33	$370.32	$356.55	$13.77	3.86%	$163.01	$176.78	144	173	29
12973	C/FRIG C170T J WHWH	L	2324	$484.55	$322.48	$305.67	$16.81	5.50%	$162.07	$178.88	145	168	23
15817	C/F&P H510E J WHWH V812	E	485	$681.27	$519.50	$426.14	$93.36	21.91%	$161.77	$255.13	146	88	58
13195	C/LEON C370 J WHWH V802	E	3	$533.33	$372.47	$356.55	$15.92	4.47%	$160.86	$176.78	147	174	27
12882	C/SHACK F310 J WHWH	L	1216	$571.86	$412.34	$399.97	$12.37	3.09%	$159.52	$171.89	148	178	30
13121	C/KELV N400H J ALAL V802	E	869	$808.33	$649.95	$600.16	$49.79	8.30%	$158.38	$208.17	149	134	15
13165	C/SHACK C390T H WWWW V802	E	149	$630.00	$475.69	$435.76	$39.93	9.16%	$154.31	$194.24	150	153	3
13164	C/SHACK C380B H WWWW V802	E	114	$646.67	$493.75	$469.06	$24.69	5.26%	$152.92	$177.61	151	171	20
12509	C/KELV H701EL J WHWH V802	E	5	$758.33	$605.99	$492.46	$113.53	23.05%	$152.34	$265.87	152	81	71
13201	C/SHACK N400H H WWWW V802	E	875	$808.33	$656.06	$584.02	$72.04	12.34%	$152.27	$224.31	153	108	45
13022	C/SHACK H510E J WHWH	L	301	$673.88	$522.05	$428.35	$93.70	21.87%	$151.83	$245.53	154	94	60
13200	C/SHACK C420T H WWWW V802	E	30	$648.33	$497.24	$446.49	$50.75	11.37%	$151.09	$201.84	155	149	6
13128	C/KELV C335T J WHWH V802	E	1560	$551.67	$400.95	$408.37	($7.42)	-1.82%	$150.72	$143.30	156	215	59
13130	C/LEON C335T J WHWH V802	E	20	$551.67	$401.99	$406.69	($4.70)	-1.16%	$149.68	$144.98	157	210	53
15869	C/SHACK F310 J WH	L	20	$450.33	$300.89	$296.63	$4.26	1.44%	$149.44	$153.70	158	191	33
13169	C/SHACK N375T H WWWW V802	E	497	$700.00	$553.20	$513.51	$39.69	7.73%	$146.80	$186.49	159	162	3
12542	C/FRIG H701EL J WHWH V813	E	52	$761.52	$616.50	$492.15	$124.35	25.27%	$145.02	$269.37	160	78	82
13218	C/KELV N400H J SASA V802	E	725	$808.33	$663.33	$597.28	$66.05	11.06%	$145.00	$211.05	161	131	30
13261	C/SHACK N400H H WWWW V814	E	8	$808.33	$663.52	$591.28	$72.24	12.22%	$144.81	$217.05	162	125	37
13259	C/SHACK N375T H WWWW V814	E	5	$700.00	$560.67	$520.77	$39.90	7.66%	$139.33	$179.23	163	167	4
13267	C/SHACK N400H J SASA V814	E	6	$808.33	$670.81	$604.53	$66.28	10.96%	$137.52	$203.80	164	142	22
15861	C/F&P C270 J WHWH V812	E	1997	$476.28	$339.25	$306.64	$32.61	10.63%	$137.03	$169.64	165	183	18
13124	C/KELV F310 J WHWH V802	E	500	$541.67	$405.23	$395.35	$9.88	2.50%	$136.44	$146.32	166	208	42
12522	C/SHACK H701SL J WHWH V802	E	881	$690.00	$554.22	$439.57	$114.65	26.08%	$135.78	$250.43	167	91	76
13254	C/LEON N400H J SASA V814	E	45	$808.33	$672.73	$604.17	$68.56	11.35%	$135.60	$204.16	168	140	28
15864	C/F&P C240B J WHWH V812	E	2137	$505.94	$370.71	$360.98	$9.73	2.70%	$135.23	$144.96	169	211	42
13108	C/FRIG C335T J WHWH V802	E	116	$551.67	$416.63	$408.87	$7.76	1.90%	$135.04	$142.80	170	216	46
13181	C/KELV C365H J WHWH V802	E	37	$613.33	$478.69	$426.23	$52.46	12.31%	$134.64	$187.10	171	161	10
15858	C/F&P C190 J WHWH V812	E	667	$408.24	$274.78	$257.66	$17.12	6.64%	$133.46	$150.58	172	194	22
13071	C/SHACK C229 J WHWH	L	1224	$454.69	$321.28	$310.07	$11.21	3.62%	$133.41	$144.62	173	213	40
13190	C/KELV F310 J WHWH V803	E	3	$541.67	$410.39	$399.27	$11.12	2.79%	$131.28	$142.40	174	217	43
13163	C/SHACK C370 H WWWW V802	E	73	$533.33	$403.50	$358.43	$45.07	12.57%	$129.83	$174.90	175	175	0
13127	C/FRIG F310 J WHWH V802	E	47	$541.67	$413.65	$394.81	$18.84	4.77%	$128.02	$146.86	176	204	28
13118	C/KELV N375T J ALAL V802	E	492	$700.00	$572.50	$518.90	$53.60	10.33%	$127.50	$181.10	177	165	12
15871	C/SHACK H510 J WH	L	5	$537.37	$410.57	$334.19	$76.38	22.86%	$126.80	$203.18	178	144	34
12504	C/KELV H701SL J WHWH V802	E	9	$690.00	$564.89	$456.40	$108.49	23.77%	$125.11	$233.60	179	99	80
12964	C/KELV F160 J WHWH	L	1397	$459.75	$337.52	$288.52	$49.00	16.98%	$122.23	$171.23	180	180	0
12985	C/SHACK C270 J WHWH	L	724	$469.36	$347.23	$306.94	$40.29	13.13%	$122.13	$162.42	181	185	4
13217	C/KELV N405T J SASA V802	E	315	$753.33	$631.31	$531.93	$99.38	18.68%	$122.02	$221.40	182	122	60
12988	C/SHACK F230 J WHWH	L	543	$474.61	$353.60	$335.82	$17.78	5.29%	$121.01	$138.79	183	223	40
12987	C/SHACK C240B J WHWH	L	1423	$495.61	$374.92	$355.54	$19.38	5.45%	$120.69	$140.07	184	220	36
15862	C/F&P F230 J WHWH V812	E	1752	$471.92	$352.99	$333.36	$19.63	5.89%	$118.93	$138.56	185	224	39
12972	C/FRIG F160 J WHWH	L	927	$459.75	$342.67	$288.31	$54.36	18.85%	$117.08	$171.44	186	179	7
13199	C/KELV C270 J WHWH V802	E	123	$446.67	$331.06	$298.56	$32.50	10.89%	$115.61	$148.11	187	198	11
13168	C/SHACK F310 H WWWW V802	E	140	$541.67	$427.39	$395.14	$32.25	8.16%	$114.28	$146.53	188	206	18

Appendix No. 2 **A RANKING OF PRODUCTS IN PROFITABILITY ORDER.**

PART No.	DESCRIPTION	EXP OR LOC	FCAST USAGE	SELLING PRICE	TOTAL ABC COST	STD F & P COST	DIFF	% DIFF	MARGIN ABC	MARGIN F & P	ABC RANK	F & P RANK	VAR RANK
13006	C/KELV H701S J WHWH V802	E	10	$673.33	$559.37	$451.87	$107.50	23.79%	$113.96	$221.46	189	120	69
13012	C/SHACK H701S J WHWH V802	E	16	$673.33	$560.52	$451.88	$108.64	24.04%	$112.81	$221.45	190	121	69
13262	C/SHACK N375T J ALAL V814	E	2	$700.00	$587.27	$526.02	$61.25	11.64%	$112.73	$173.98	191	176	15
13147	C/LEON C170T J WHWH V802	E	18	$425.00	$312.99	$300.01	$12.98	4.33%	$112.01	$124.99	192	235	43
13102	C/KELV C170T J WHWH V802	E	2120	$425.00	$314.53	$303.74	$10.79	3.55%	$110.47	$121.26	193	240	47
15863	C/F&P C250T J WHWH V812	E	1977	$505.94	$395.79	$335.73	$60.06	17.89%	$110.15	$170.21	194	182	12
12962	C/KELV P120 J WHWH	L	2156	$359.21	$249.91	$212.30	$37.61	17.72%	$109.30	$146.91	195	201	6
13215	C/KELV N375T J SASA V802	E	369	$700.00	$590.75	$517.38	$73.37	14.18%	$109.25	$182.62	196	164	32
13162	C/SHACK C335T H WWWW V802	E	148	$551.67	$443.18	$411.60	$31.58	7.67%	$108.49	$140.07	197	221	24
12981	C/SHACK C190 J WHWH	L	1089	$402.59	$295.84	$264.29	$31.55	11.94%	$106.75	$138.30	198	226	28
13177	C/SHACK C170T J FAFA V802	E	262	$425.00	$319.39	$304.78	$14.61	4.79%	$105.61	$120.22	199	241	42
13123	C/KELV F230 J WHWH V802	E	81	$458.33	$353.07	$332.77	$20.30	6.10%	$105.26	$125.56	200	234	34
12983	C/SHACK C170T J WHWH	L	1439	$418.11	$316.35	$305.44	$10.91	3.57%	$101.76	$112.67	201	257	56
13253	C/LEON C335T J SASA V802	E	152	$551.67	$450.39	$411.83	$38.56	9.36%	$101.28	$139.84	202	222	20
15860	C/F&P C170T J WHWH V812	E	1090	$416.09	$315.10	$304.33	$10.77	3.54%	$100.99	$111.76	203	259	56
13014	C/KELV H220E J WHWH	L	1892	$456.77	$355.93	$319.52	$36.41	11.40%	$100.84	$137.25	204	229	25
13255	C/LEON N375T J SASA V814	E	45	$700.00	$599.30	$523.03	$76.27	14.58%	$100.70	$176.97	205	172	33
12531	C/SHACK H701SL J WHWH V803	E	104	$690.00	$590.03	$455.39	$134.64	29.57%	$99.97	$234.61	206	98	108
13106	C/FRIG C170T J WHWH V802	E	241	$425.00	$325.37	$302.71	$22.66	7.49%	$99.63	$122.29	207	237	30
15816	C/F&P H360E J WHWH V812	E	952	$517.28	$417.99	$370.16	$47.83	12.92%	$99.29	$147.12	208	200	8
13198	C/KELV C190 J WHWH V802	E	181	$375.00	$275.88	$258.66	$17.22	6.66%	$99.12	$116.34	209	249	40
13266	C/SHACK N405T J SASA V814	E	6	$753.33	$654.50	$548.81	$105.69	19.26%	$98.83	$204.52	210	139	71
13182	C/KELV C170T J WHWH V803	E	51	$425.00	$327.16	$306.32	$20.84	6.80%	$97.84	$118.68	211	244	33
13021	C/SHACK H360E J WHWH	L	710	$518.88	$421.18	$372.53	$48.65	13.06%	$97.70	$146.35	212	207	5
13025	C/FRIG H220E J WHWH	L	1272	$456.77	$359.22	$318.96	$40.26	12.62%	$97.55	$137.81	213	227	14
13126	C/FRIG F230 J WHWH V802	E	21	$458.33	$361.42	$332.58	$28.84	8.67%	$96.91	$125.75	214	233	19
12545	C/KELV H701SL J WHWH V803	E	5	$690.00	$594.33	$458.21	$136.12	29.71%	$95.67	$231.79	215	101	114
13265	C/SHACK N375T J SASA V814	E	3	$700.00	$605.51	$583.97	$21.54	3.69%	$94.49	$116.03	216	250	34
13252	C/LEON C250T J FAFA V802	E	30	$483.33	$389.28	$325.04	$64.24	19.76%	$94.05	$158.29	217	188	29
13232	C/KELV N405T J ALAL V814	E	2	$663.33	$572.21	$540.71	$31.50	5.83%	$91.12	$122.62	218	236	18
12970	C/FRIG P120 J WHWH	L	1327	$359.21	$269.72	$212.46	$57.26	26.95%	$89.49	$146.75	219	205	14
13152	C/LEON C250T J WHWH V802	E	8	$483.33	$393.97	$331.69	$62.28	18.78%	$89.36	$151.64	220	192	28
15825	C/F&P H360S J WHWH V812	E	948	$474.54	$387.37	$333.36	$54.01	16.20%	$87.17	$141.18	221	218	3
12508	C/KELV H510EL J WHWH V802	E	130	$600.00	$513.65	$429.53	$84.12	19.58%	$86.35	$170.47	222	181	41
13146	C/KELV C250T J WHWH V802	E	1410	$483.33	$398.47	$338.65	$59.82	17.66%	$84.86	$144.68	223	212	11
13227	C/FRIG C190 J WHWH V802	E	17	$375.00	$294.10	$259.00	$35.10	13.55%	$80.90	$116.00	224	251	27
15870	C/SHACK H360 J WH	L	35	$439.28	$359.60	$289.14	$70.46	24.37%	$79.68	$150.14	225	196	29
13183	C/KELV C250T J WHWH V803	E	48	$483.33	$404.86	$334.82	$70.04	20.92%	$78.47	$148.51	226	197	29
12520	C/SHACK H510SL J WHWH V810	E	1021	$585.00	$507.46	$400.86	$106.60	26.59%	$77.54	$184.14	227	163	64
15873	C/SHACK C120 J WH	L	104	$281.95	$205.68	$180.97	$24.71	13.65%	$76.27	$100.98	228	266	38
13176	C/SHACK C250T J FAFA V802	E	542	$483.33	$411.68	$333.17	$78.51	23.56%	$71.65	$150.16	229	195	34
13107	C/FRIG C250T J WHWH V802	E	65	$483.33	$412.98	$335.30	$77.68	23.17%	$70.35	$148.03	230	199	31
12506	C/KELV H360EL J WHWH V802	E	200	$491.67	$422.96	$374.08	$48.88	13.07%	$68.71	$117.59	231	245	14
12502	C/KELV H360SL J WHWH V802	E	15	$456.67	$392.49	$337.32	$55.17	16.36%	$64.18	$119.35	232	243	11
12525	C/SHACK H360SL J WHWH V802	E	766	$456.67	$392.86	$336.99	$55.87	16.58%	$63.81	$119.68	233	242	9
12538	C/KELV H360EL J WHWH V803	E	38	$491.67	$428.23	$375.82	$52.41	13.95%	$63.44	$115.85	234	252	18
12519	C/SHACK H360SL J WHWH V810	E	1428	$471.25	$408.53	$339.47	$69.06	20.34%	$62.72	$131.78	235	232	3

Appendix No. 2 **A RANKING OF PRODUCTS IN PROFITABILITY ORDER.**

PART No.	DESCRIPTION	EXP OR LOC	FCAST USAGE	SELLING PRICE	TOTAL ABC COST	STD F & P COST	DIFF	% DIFF	MARGIN ABC	MARGIN F & P	ABC RANK	F & P RANK	VAR RANK
12503	C/KELV H510SL J WHWH V802	E	8	$555.00	$493.62	$395.96	$97.66	24.66%	$61.38	$159.04	236	187	49
13230	C/KELV N400H J WHWH V814	E	46	$663.33	$601.98	$594.33	$7.65	1.29%	$61.35	$69.00	237	295	58
12526	C/SHACK H510SL J WHWH V802	E	489	$555.00	$494.24	$395.94	$98.30	24.83%	$60.76	$159.06	238	186	52
13153	C/KELV F160 J WHWH V803	E	19	$403.33	$342.94	$286.22	$56.72	19.82%	$60.39	$117.11	239	246	7
15859	C/F&P F160 J WHWH V812	E	832	$400.39	$340.48	$286.15	$54.33	18.99%	$59.91	$114.24	240	256	16
12534	C/KELV H360SL J WHWH V803	E	6	$456.67	$398.43	$339.77	$58.66	17.26%	$58.24	$116.90	241	247	6
12530	C/SHACK H360SL J WHWH V803	E	536	$456.67	$399.14	$339.78	$59.36	17.47%	$57.53	$116.89	242	248	6
12982	C/SHACK F160 J WHWH	L	581	$397.29	$340.97	$288.61	$52.36	18.14%	$56.32	$108.68	243	261	18
12539	C/KELV H510EL J WHWH V803	E	16	$600.00	$544.06	$430.88	$113.18	26.27%	$55.94	$169.12	244	184	60
13004	C/KELV H360S J WHWH V802	E	10	$440.00	$386.97	$332.79	$54.18	16.28%	$53.03	$107.21	245	264	19
13009	C/SHACK H360S J WHWH V802	E	25	$440.00	$387.13	$332.33	$54.80	16.49%	$52.87	$107.67	246	263	17
12998	C/FRIG H360S J WHWH V802	E	5	$440.00	$389.29	$329.91	$59.38	18.00%	$50.71	$110.09	247	260	13
12518	C/SHACK H220SL J WHWH V810	E	3494	$383.75	$333.43	$288.59	$44.84	15.54%	$50.32	$95.16	248	273	25
13005	C/KELV H510S J WHWH V802	E	16	$538.33	$488.09	$391.43	$96.66	24.69%	$50.24	$146.90	249	202	47
13011	C/SHACK H510S J WHWH V802	E	14	$538.33	$488.80	$391.43	$97.37	24.88%	$49.53	$146.90	250	203	47
13013	C/KELV H160E J WHWH	L	1982	$394.91	$346.74	$298.93	$47.81	15.99%	$48.17	$95.98	251	272	21
12501	C/KELV H220SL J WHWH V802	E	15	$375.00	$328.49	$284.77	$43.72	15.35%	$46.51	$90.23	252	274	22
13024	C/FRIG H160E J WHWH	L	1343	$394.91	$349.04	$298.77	$50.27	16.83%	$45.87	$96.14	253	271	18
12524	C/SHACK H220SL J WHWH V802	E	697	$375.00	$329.28	$285.16	$44.12	15.47%	$45.72	$89.84	254	275	21
13257	C/KELV F310 J ALAL V802	E	5	$541.67	$496.23	$395.57	$100.66	25.45%	$45.44	$146.10	255	209	46
13122	C/KELV F160 J WHWH V802	E	214	$383.33	$340.42	$285.56	$54.86	19.21%	$42.91	$97.77	256	269	13
12535	C/KELV H220SL J WHWH V803	E	272	$375.00	$332.10	$286.48	$45.62	15.92%	$42.90	$88.52	257	276	19
12505	C/KELV H220EL J WHWH V802	E	174	$403.33	$360.47	$321.10	$39.37	12.26%	$42.86	$82.23	258	279	21
15815	C/F&P H220E J WHWH V812	E	1089	$397.78	$355.48	$317.24	$38.24	12.05%	$42.30	$80.54	259	282	23
15824	C/F&P H220S J WHWH V812	E	1124	$365.50	$323.51	$280.93	$42.58	15.16%	$41.99	$84.57	260	277	17
13229	C/KELV N405T J WHWH V814	E	3	$580.00	$539.48	$534.05	$5.43	1.02%	$40.52	$45.95	261	304	43
12532	C/SHACK H510SL J WHWH V803	E	147	$555.00	$515.33	$398.01	$117.32	29.48%	$39.67	$156.99	262	189	73
12541	C/FRIG H510EL J WHWH V813	E	41	$578.81	$539.16	$435.39	$103.77	23.83%	$39.65	$143.42	263	214	49
13242	C/FRIG N400H J ALAL V814	E	12	$741.67	$702.06	$607.12	$94.94	15.64%	$39.61	$134.55	264	231	33
13020	C/SHACK H220E J WHWH	L	580	$395.88	$357.71	$319.13	$38.58	12.09%	$38.17	$76.75	265	287	22
13125	C/FRIG F160 J WHWH V802	E	100	$383.33	$346.24	$285.37	$60.87	21.33%	$37.09	$97.96	266	268	2
12512	C/KELV H360EL J WHWH V810	E	287	$481.67	$445.01	$382.26	$62.75	16.42%	$36.66	$99.41	267	267	0
15874	C/F&P P120 J WHWH V812	E	168	$295.72	$259.19	$212.78	$46.41	21.81%	$36.53	$82.94	268	278	10
13003	C/KELV H220S J WHWH V802	E	5	$358.33	$322.96	$280.24	$42.72	15.24%	$35.37	$78.09	269	285	16
13135	C/LEON C335T J ALAL V802	E	264	$551.67	$516.45	$413.35	$103.10	24.94%	$35.22	$138.32	270	225	45
13008	C/SHACK H220S J WHWH V802	E	27	$358.33	$323.76	$280.63	$43.13	15.37%	$34.57	$77.70	271	286	15
12533	C/KELV H510SL J WHWH V803	E	3	$555.00	$521.04	$404.21	$116.83	28.90%	$33.96	$150.79	272	193	79
12997	C/FRIG H220S J WHWH V802	E	13	$358.33	$326.59	$280.12	$46.47	16.59%	$31.74	$78.21	273	284	11
13100	C/KELV P120 J WHWH V802	E	271	$286.67	$255.46	$212.42	$43.04	20.26%	$31.21	$74.25	274	290	16
12540	C/FRIG H360EL J WHWH V813	E	96	$487.19	$460.51	$379.21	$81.30	21.44%	$26.68	$107.98	275	262	13
13245	C/FRIG N400H J SASA V814	E	18	$741.67	$715.46	$604.24	$111.22	18.41%	$26.21	$137.43	276	228	48
13151	C/KELV P120 J WHWH V803	E	40	$286.67	$266.37	$213.66	$52.71	24.67%	$20.30	$73.01	277	291	14
12536	C/KELV H160SL J WHWH V803	E	43	$348.33	$329.24	$267.64	$61.60	23.02%	$19.09	$80.69	278	281	3
12528	C/SHACK H160SL J WHWH V803	E	127	$348.33	$329.50	$267.64	$61.86	23.11%	$18.83	$80.69	279	280	1
12980	C/SHACK P120 J WHWH	L	779	$310.32	$291.88	$213.36	$78.52	36.80%	$18.44	$96.96	280	270	10
13228	C/KELV N375T J WHWH V814	E	39	$533.33	$516.03	$519.50	($3.47)	-0.67%	$17.30	$13.83	281	310	29
12500	C/KELV H160SL J WHWH V802	E	42	$341.00	$324.59	$264.89	$59.70	22.54%	$16.41	$76.11	282	288	6

Appendix No. 2 A RANKING OF PRODUCTS IN PROFITABILITY ORDER.

PART No.	DESCRIPTION	EXP OR LOC	FCAST USAGE	SELLING PRICE	TOTAL ABC COST	STD F & P COST	DIFF	% DIFF	MARGIN ABC	MARGIN F & P	ABC RANK	F & P RANK	VAR RANK
12552	C/KELV H160EL J WHWH V802	E	2	$366.67	$351.13	$300.47	$50.66	16.86%	$15.54	$66.20	283	297	14
12516	C/SHARP H220EL J WHWH V810	E	4265	$378.33	$363.77	$321.52	$42.25	13.14%	$14.56	$56.81	284	302	18
13002	C/KELV H160S J WHWH V802	E	5	$331.67	$319.07	$260.36	$58.71	22.55%	$12.60	$71.31	285	293	8
13007	C/SHACK H160S J WHWH V802	E	24	$331.67	$319.33	$260.36	$58.97	22.65%	$12.34	$71.31	286	294	8
13105	C/FRIG P120 J WHWH V802	E	54	$286.67	$275.66	$211.75	$63.91	30.18%	$11.01	$74.92	287	289	2
13248	C/LEON N375T J ALAL V814	E	50	$591.66	$581.05	$524.55	$56.50	10.77%	$10.61	$67.11	288	296	8
12996	C/FRIG H160S J WHWH V802	E	3	$331.67	$321.22	$258.86	$62.36	24.09%	$10.45	$72.81	289	292	3
12527	C/SHARP H360EL J WHWH V810	E	659	$453.33	$445.34	$374.47	$70.87	18.93%	$7.99	$78.86	290	283	7
13233	C/KELV N400H J ALAL V814	E	45	$663.33	$657.41	$607.41	$50.00	8.23%	$5.92	$55.92	291	303	12
13019	C/SHACK H160E J WHWH	L	320	$342.10	$348.61	$299.02	$49.59	16.58%	($6.51)	$43.08	292	305	13
13236	C/KELV N400H J SASA V814	E	17	$663.33	$670.81	$604.53	$66.28	10.96%	($7.48)	$58.80	293	300	7
15814	C/F&P H160E J WHWH V812	E	1637	$336.71	$346.44	$296.65	$49.79	16.78%	($9.73)	$40.06	294	307	13
15823	C/F&P H160S J WHWH V812	E	2126	$299.21	$319.82	$261.05	$58.77	22.51%	($20.61)	$38.16	295	308	13
12515	C/SHARP H160EL J WHWH V810	E	576	$325.00	$359.89	$301.92	$57.97	19.20%	($34.89)	$23.08	296	309	13
13231	C/KELV N375T J ALAL V814	E	35	$533.33	$579.97	$526.16	$53.81	10.23%	($46.64)	$7.17	297	312	15
13235	C/KELV N405T J SASA V814	E	2	$580.00	$638.79	$539.19	$99.60	18.47%	($58.79)	$40.81	298	306	8
13234	C/KELV N375T J SASA V814	E	15	$533.33	$598.23	$524.64	$73.59	14.03%	($64.90)	$8.69	299	311	12
13145	C/KELV F310 J WHWH V810	E	35	$475.00	$623.79	$412.76	$211.03	51.13%	($148.79)	$62.24	300	299	1
15857	C/F&P P190 J WHWH V812	E	112	$408.24	$568.53	$254.11	$314.42	123.73%	($160.29)	$154.13	301	190	111
13101	C/KELV P190 J WHWH V802	E	134	$375.00	$566.30	$253.52	$312.78	123.37%	($191.30)	$121.48	302	239	63
13159	C/SHACK C170T H WWWW V802	E	124	$425.00	$665.53	$309.79	$355.74	114.83%	($240.53)	$115.21	303	254	49
13184	C/SHACK C190 H WWWW V802	E	47	$375.00	$682.87	$268.94	$413.93	153.91%	($307.87)	$106.06	304	265	39
13056	C/FRIG C240B H WWWW V813	E	144	$416.62	$742.83	$358.38	$384.45	107.27%	($326.21)	$58.24	305	301	4
13160	C/SHACK C250T H WWWW V802	E	108	$483.33	$909.94	$347.54	$562.40	161.82%	($426.61)	$135.79	306	230	76
13167	C/SHACK F230 H WWWW V802	E	29	$458.33	$895.24	$343.24	$552.00	160.82%	($436.91)	$115.09	307	255	52
13226	C/SHACK F230 H WWWW V803	E	16	$458.33	$898.86	$342.60	$556.26	162.36%	($440.53)	$115.73	308	253	55
13161	C/SHACK C270 H WWWW V802	E	29	$446.67	$984.38	$306.01	$678.37	221.68%	($537.71)	$140.66	309	219	90
13150	C/SHACK P190 J WHWH V802	E	41	$375.00	$984.63	$262.72	$721.91	274.78%	($609.63)	$112.28	310	258	52
13158	C/SHACK P120 H WWWW V802	E	84	$286.67	$1,324.22	$222.75	$1,101.47	494.49%	($1,037.55)	$63.92	311	298	13
13143	C/FRIG P190 J WHWH V802	E	9	$375.00	$2,713.77	$253.22	$2,460.55	971.70%	($2,338.77)	$121.78	312	238	74

ABSOLUTE AVERAGE DIFFERENCE IN RANK = 23.97

Appendix No. 3

CUMULATIVE PROFITS BASED ON EACH COSTING MODEL
PRODUCTS RANKED IN CUMULATIVE ABC MARGIN ORDER

PART No.	DESCRIPTION	EXP OR LOC	FCAST USAGE	TOTAL ABC COST	SELLING PRICE	STD F&P COST	MARGIN ABC	MARGIN F&P	TOTAL ABC MARGIN	TOTAL F&P MARGIN	ABC RANK	F&P RANK	VAR RANK	CUMULATIVE ABC MARGIN	PERCENT CUM ABC MAR	PERCENT PRODUCTS	CUMULATIVE F&P MARGIN	PERCENT CUM F&P MAR
12958	C/KELV C380B J WHWH	L	4986	$452.99	$814.61	$467.68	$361.62	$346.93	$1,803,037	$1,729,793	1	1	0	$1,803,037	4.47%	0.32%	$1,729,793	3.81%
15856	C/F&P N395B J WHWH V812	E	4513	$516.71	$866.21	$530.10	$349.50	$336.11	$1,577,294	$1,516,864	2	2	0	$3,380,331	8.37%	0.64%	$3,246,657	7.15%
12961	C/KELV N395B J WHWH	L	3440	$524.48	$973.61	$541.88	$449.13	$431.73	$1,545,007	$1,485,151	3	3	0	$4,925,338	12.20%	0.96%	$4,731,808	10.42%
15855	C/F&P C410B J WHWH V812	E	3548	$451.50	$768.50	$465.85	$317.00	$302.65	$1,124,716	$1,073,802	4	4	0	$6,050,054	14.98%	1.28%	$5,805,610	12.79%
12861	C/FRIG C380B J WHWH	L	3062	$464.89	$814.61	$468.35	$349.72	$346.26	$1,070,843	$1,060,248	5	5	0	$7,120,897	17.64%	1.60%	$6,865,858	15.12%
12955	C/KELV C370 J WHWH	L	2705	$360.92	$710.52	$354.35	$349.60	$356.17	$945,668	$963,440	6	6	0	$8,066,565	19.98%	1.92%	$7,829,298	17.25%
12968	C/KELV C240B J WHWH	L	4076	$366.17	$573.71	$361.42	$207.54	$212.29	$845,933	$865,294	7	7	0	$8,912,498	22.07%	2.24%	$8,694,592	19.15%
12956	C/KELV C335T J WHWH	L	2607	$399.44	$722.75	$411.34	$323.31	$311.41	$842,869	$811,846	8	8	0	$9,755,367	24.16%	2.56%	$9,506,438	20.94%
12953	C/FRIG N395B J WHWH	L	1817	$536.53	$973.61	$542.65	$437.08	$430.96	$794,174	$783,054	9	9	0	$10,549,541	26.13%	2.88%	$10,289,492	22.67%
15843	C/F&P C370 J WHWH V812	E	2807	$360.88	$612.36	$347.09	$251.48	$265.27	$705,904	$744,613	10	10	0	$11,255,445	27.87%	3.21%	$11,034,105	24.31%
15847	C/F&P C390T J WHWH V812	E	2501	$422.47	$689.13	$422.84	$266.66	$266.29	$666,917	$665,991	11	12	1	$11,922,362	29.53%	3.53%	$11,700,096	25.77%
12965	C/KELV C170T J WHWH	L	3835	$312.31	$484.55	$306.70	$172.24	$177.85	$660,540	$682,055	12	11	1	$12,582,902	31.16%	3.85%	$12,382,151	27.28%
13067	C/KELV N369B J WHWH	L	1689	$518.27	$906.27	$515.13	$388.00	$391.14	$655,332	$660,635	13	13	0	$13,238,234	32.79%	4.17%	$13,042,786	28.73%
12960	C/KELV N400H J WHWH	L	1375	$577.67	$1,053.05	$574.61	$475.38	$478.44	$653,648	$657,855	14	14	0	$13,891,882	34.40%	4.49%	$13,700,641	30.18%
12880	C/KELV C410B J WHWH	L	1482	$459.11	$881.95	$477.66	$422.84	$404.29	$626,649	$599,158	15	16	1	$14,518,531	35.96%	4.81%	$14,299,799	31.50%
15850	C/F&P C420T J WHWH V812	E	2011	$442.74	$749.31	$436.54	$306.57	$312.77	$616,512	$628,980	16	15	1	$15,135,043	37.48%	5.13%	$14,928,779	32.89%
12889	C/SHACK C380B J WHWH	L	2313	$459.85	$703.03	$462.55	$243.18	$240.48	$562,475	$556,230	17	18	1	$15,697,518	38.88%	5.45%	$15,485,009	34.11%
15848	C/F&P N375T J WHWH V812	E	1894	$490.97	$786.82	$495.14	$295.85	$291.68	$560,340	$552,442	18	19	1	$16,257,858	40.26%	5.77%	$16,037,451	35.33%
12855	C/FRIG C370 J WHWH	L	1656	$372.50	$710.52	$355.01	$338.02	$355.51	$559,761	$588,725	19	17	2	$16,817,619	41.65%	6.09%	$16,626,176	36.62%
12954	C/KELV F310 J WHWH	L	1931	$402.92	$661.64	$397.53	$258.72	$264.11	$499,588	$509,996	20	21	1	$17,317,207	42.89%	6.41%	$17,136,172	37.75%
12857	C/FRIG C335T J WHWH	L	1610	$414.44	$722.75	$411.83	$308.31	$310.92	$496,379	$500,581	21	22	1	$17,813,586	44.12%	6.73%	$17,636,753	38.85%
15849	C/F&P C380B J WHWH V812	E	1838	$445.64	$709.19	$458.35	$263.55	$250.84	$484,405	$461,044	22	26	4	$18,297,991	45.32%	7.05%	$18,097,797	39.87%
12977	C/FRIG C240B J WHWH	L	2512	$385.43	$573.71	$360.70	$188.28	$213.01	$472,959	$535,081	23	20	3	$18,770,950	46.49%	7.37%	$18,632,878	41.04%
15852	C/F&P N405T J WHWH V812	E	1410	$516.12	$847.01	$511.03	$330.89	$335.98	$466,555	$473,732	24	25	1	$19,237,505	47.64%	7.69%	$19,106,610	42.09%
15842	C/F&P F310 J WHWH V812	E	2376	$405.95	$599.28	$395.92	$193.33	$203.36	$459,352	$483,183	25	23	2	$19,696,857	48.78%	8.01%	$19,589,793	43.15%
12883	C/SHACK C370 J WHWH	L	1898	$376.60	$613.55	$360.95	$236.95	$252.60	$449,731	$479,435	26	24	2	$20,146,588	49.89%	8.33%	$20,069,228	44.21%
12957	C/KELV N375T J WHWH	L	1115	$499.43	$900.16	$507.64	$400.73	$392.52	$446,814	$437,660	27	32	5	$20,593,402	51.00%	8.65%	$20,506,888	45.17%
12963	C/KELV C190 J WHWH	L	2205	$271.35	$465.95	$259.40	$194.60	$206.55	$429,093	$455,443	28	29	1	$21,022,495	52.06%	8.97%	$20,962,331	46.18%
15845	C/F&P C335T J WHWH V812	E	1827	$391.56	$625.45	$398.92	$233.89	$226.53	$427,317	$413,870	29	34	5	$21,449,812	53.12%	9.29%	$21,376,201	47.09%
12906	C/F&P N395B H WWWW V812	E	1355	$551.65	$866.21	$528.64	$314.56	$337.57	$426,229	$457,407	30	27	3	$21,876,041	54.18%	9.62%	$21,833,608	48.10%
13070	C/FRIG N369B J WHWH	L	1123	$529.66	$906.27	$515.35	$376.61	$390.92	$422,933	$439,003	31	31	0	$22,298,974	55.22%	9.94%	$22,272,611	49.06%
15872	C/F&P N369B H WWWW V812	E	1449	$543.70	$806.01	$499.34	$262.31	$306.67	$380,087	$444,365	32	30	2	$22,679,061	56.17%	10.26%	$22,716,976	50.04%
12873	C/KELV C390T J WHWH	L	1030	$429.89	$796.28	$431.94	$366.39	$364.34	$377,382	$375,270	33	37	4	$23,056,443	57.10%	10.58%	$23,092,246	50.87%
12973	C/FRIG C170T J WHWH	L	2324	$322.48	$484.55	$305.67	$162.07	$178.88	$376,651	$415,717	34	33	1	$23,433,094	58.03%	10.90%	$23,507,963	51.78%
12866	C/FRIG C410B J WHWH	L	913	$471.01	$881.95	$478.33	$410.94	$403.62	$375,188	$368,505	35	38	3	$23,808,282	58.96%	11.22%	$23,876,468	52.60%
13044	C/F&P C380B H WWWW	L	1057	$489.53	$839.06	$464.77	$349.53	$374.29	$369,453	$395,625	36	36	0	$24,177,735	59.88%	11.54%	$24,272,093	53.47%
12894	C/FRIG N400H J WHWH	L	838	$612.83	$1,053.05	$573.97	$440.22	$479.08	$368,904	$401,469	37	35	2	$24,546,639	60.79%	11.86%	$24,673,562	54.35%
13016	C/KELV H360E J WHWH	L	2012	$418.42	$598.87	$372.44	$180.45	$226.43	$363,065	$455,577	38	28	10	$24,909,704	61.69%	12.18%	$25,129,139	55.35%
13065	C/KELV C229 J WHWH	L	1650	$308.28	$526.60	$303.34	$218.32	$223.26	$360,228	$368,379	39	39	0	$25,269,932	62.58%	12.50%	$25,497,518	56.17%
12896	C/SHACK N395B J WHWH	L	1085	$531.02	$839.05	$534.35	$308.03	$304.70	$334,213	$330,600	40	44	4	$25,604,145	63.41%	12.82%	$25,828,118	56.89%
12854	C/FRIG F310 J WHWH	L	1228	$407.06	$661.64	$397.04	$254.58	$264.60	$312,624	$324,929	41	46	5	$25,916,769	64.18%	13.14%	$26,153,047	57.61%
12966	C/KELV C270 J WHWH	L	1339	$321.24	$542.93	$296.66	$221.69	$246.27	$296,843	$329,756	42	45	3	$26,213,612	64.92%	13.46%	$26,482,803	58.34%
15355	C/F&P N395B H WWWW	L	666	$561.48	$998.05	$538.51	$436.57	$459.54	$290,756	$306,054	43	50	7	$26,504,368	65.64%	13.78%	$26,788,857	59.01%
15864	C/F&P C240B J WHWH V812	E	2137	$370.71	$505.94	$360.98	$135.23	$144.96	$288,987	$309,780	44	49	5	$26,793,355	66.36%	14.10%	$27,098,637	59.69%
12969	C/KELV F230 J WHWH	L	1427	$350.15	$549.09	$335.74	$198.94	$213.35	$283,887	$304,450	45	52	7	$27,077,242	67.06%	14.42%	$27,403,087	60.36%
12885	C/SHACK C335T J WHWH	L	1324	$412.15	$623.98	$415.95	$211.83	$208.03	$280,463	$275,432	46	54	8	$27,357,705	67.75%	14.74%	$27,678,519	60.97%
15861	C/F&P C270 J WHWH V812	E	1997	$339.25	$476.28	$306.64	$137.03	$169.64	$273,649	$338,771	47	40	7	$27,631,354	68.43%	15.06%	$28,017,290	61.72%

Appendix No. 3

CUMULATIVE PROFITS BASED ON EACH COSTING MODEL
PRODUCTS RANKED IN CUMULATIVE ABC MARGIN ORDER

PART No.	DESCRIPTION	EXP OR LOC	FCAST USAGE	TOTAL ABC COST	SELLING PRICE	STD F&P COST	MARGIN ABC	MARGIN F&P	TOTAL ABC MARGIN	TOTAL F&P MARGIN	ABC RANK	F&P RANK	VAR RANK	CUMULATIVE ABC MARGIN	PERCENT CUM ABC MAR	PERCENT PRODUCTS	CUMULATIVE F&P MARGIN	PERCENT CUM F&P MAR
12884	C/FRIG N375T J WHWH	L	686	$512.11	$900.16	$505.32	$388.05	$394.84	$266,202	$270,860	48	55	7	$27,897,556	69.09%	15.38%	$28,288,150	62.31%
12870	C/KELV C365H J WHWH	L	690	$430.60	$802.18	$422.15	$371.58	$380.03	$256,390	$262,221	49	57	8	$28,153,946	69.73%	15.71%	$28,550,371	62.89%
15854	C/F&P N400H J WHWH V812	E	727	$570.48	$922.03	$563.16	$351.55	$358.87	$255,577	$260,898	50	58	8	$28,409,523	70.36%	16.03%	$28,811,269	63.47%
15853	C/F&P C415H J WHWH V812	E	792	$502.65	$824.33	$494.94	$321.68	$329.39	$254,771	$260,877	51	59	8	$28,664,294	70.99%	16.35%	$29,072,146	64.04%
12971	C/FRIG C190 J WHWH	L	1369	$287.64	$465.95	$259.28	$178.31	$206.67	$244,106	$282,931	52	53	1	$28,908,400	71.59%	16.67%	$29,355,077	64.66%
13026	C/FRIG H360E J WHWH	L	1390	$423.67	$598.87	$372.28	$175.20	$226.59	$243,528	$314,960	53	48	5	$29,151,928	72.20%	16.99%	$29,670,037	65.36%
12895	C/SHACK C410B J WHWH	L	821	$466.23	$760.87	$472.70	$294.64	$288.17	$241,899	$236,588	54	65	11	$29,393,827	72.80%	17.31%	$29,906,625	65.88%
13205	C/F&P N369B H WWWW	L	641	$554.28	$930.71	$510.54	$376.43	$420.17	$241,292	$269,329	55	56	1	$29,635,119	73.39%	17.63%	$30,175,954	66.47%
12962	C/KELV P120 J WHWH	L	2156	$249.91	$359.21	$212.30	$109.30	$146.91	$235,651	$316,738	56	47	9	$29,870,770	73.98%	17.95%	$30,492,692	67.17%
13128	C/KELV C335T J WHWH V802	E	1560	$400.95	$551.67	$408.37	$150.72	$143.30	$235,123	$223,548	57	67	10	$30,105,893	74.56%	18.27%	$30,716,240	67.66%
13102	C/KELV C170T J WHWH V802	E	2120	$314.53	$425.00	$303.74	$110.47	$121.26	$234,196	$257,071	58	61	3	$30,340,089	75.14%	18.59%	$30,973,311	68.23%
12967	C/KELV C250T J WHWH	L	1316	$396.38	$573.71	$341.61	$177.33	$232.10	$233,366	$305,444	59	51	8	$30,573,455	75.72%	18.91%	$31,278,755	68.90%
12859	C/FRIG C390T J WHWH	L	636	$443.95	$796.28	$431.54	$352.33	$364.74	$224,082	$231,975	60	66	6	$30,797,537	76.27%	19.23%	$31,510,730	69.41%
15863	C/F&P C250T J WHWH V812	E	1977	$395.79	$505.94	$335.73	$110.15	$170.21	$217,767	$336,505	61	42	19	$31,015,304	76.81%	19.55%	$31,847,235	70.15%
15862	C/F&P F230 J WHWH V812	E	1752	$352.99	$471.92	$333.36	$118.93	$138.56	$208,365	$242,757	62	62	0	$31,223,669	77.33%	19.87%	$32,089,992	70.69%
13068	C/FRIG C229 J WHWH	L	935	$318.39	$526.60	$304.03	$208.21	$222.57	$194,676	$208,103	63	70	7	$31,418,345	77.81%	20.19%	$32,298,095	71.15%
12882	C/SHACK F310 J WHWH	L	1216	$412.34	$571.86	$399.97	$159.52	$171.89	$193,976	$209,018	64	69	5	$31,612,321	78.29%	20.51%	$32,507,113	71.61%
12521	C/SHACK H701SL J WHWH V810	E	1175	$572.73	$737.50	$450.65	$164.77	$286.85	$193,605	$337,049	65	41	24	$31,805,926	78.77%	20.83%	$32,844,162	72.35%
13014	C/KELV H220E J WHWH	L	1892	$355.93	$456.77	$319.52	$100.84	$137.25	$190,789	$259,677	66	60	6	$31,996,715	79.24%	21.15%	$33,103,839	72.92%
12978	C/FRIG F230 J WHWH	L	973	$357.10	$549.09	$335.50	$191.99	$213.59	$186,806	$207,823	67	71	4	$32,183,521	79.70%	21.47%	$33,311,662	73.38%
12875	C/KELV C380B J SASA	L	532	$498.71	$839.06	$467.74	$340.35	$371.32	$181,066	$197,542	68	75	7	$32,364,587	80.15%	21.79%	$33,509,204	73.81%
12518	C/SHACK H220SL J WHWH V810	E	3494	$333.43	$383.75	$288.59	$50.32	$95.16	$175,818	$332,489	69	43	26	$32,540,405	80.59%	22.12%	$33,841,693	74.55%
12987	C/SHACK C240B J WHWH	L	1423	$374.92	$495.61	$355.54	$120.69	$140.07	$171,742	$199,320	70	73	3	$32,712,147	81.01%	22.44%	$34,041,013	74.99%
12964	C/KELV F160 J WHWH	L	1397	$337.52	$459.75	$288.52	$122.23	$171.23	$170,755	$239,208	71	64	7	$32,882,902	81.44%	22.76%	$34,280,221	75.51%
13071	C/SHACK C229 J WHWH	L	1224	$321.28	$454.69	$310.07	$133.41	$144.62	$163,294	$177,015	72	85	13	$33,046,196	81.84%	23.08%	$34,457,236	75.90%
12975	C/FRIG C270 J WHWH	L	804	$343.42	$542.93	$296.48	$199.51	$246.45	$160,406	$198,146	73	74	1	$33,206,602	82.24%	23.40%	$34,655,382	76.34%
12881	C/KELV N395B J SASA	L	377	$574.26	$998.05	$541.94	$423.79	$456.11	$159,769	$171,953	74	87	13	$33,366,371	82.63%	23.72%	$34,827,335	76.72%
12856	C/FRIG C365H J WHWH	L	429	$460.37	$802.18	$420.34	$341.81	$381.84	$146,636	$163,809	75	88	13	$33,513,007	83.00%	24.04%	$34,991,144	77.08%
12983	C/SHACK C170T J WHWH	L	1439	$316.35	$418.11	$305.44	$101.76	$112.67	$146,433	$162,132	76	89	13	$33,659,440	83.36%	24.36%	$35,153,276	77.44%
12892	C/SHACK N405T J WHWH	L	470	$537.04	$839.05	$527.12	$302.01	$311.93	$141,945	$146,607	77	94	17	$33,801,385	83.71%	24.68%	$35,299,883	77.76%
15844	C/F&P C365H J WHWH V812	E	547	$429.71	$689.13	$413.34	$259.42	$275.79	$141,903	$150,857	78	92	14	$33,943,288	84.06%	25.00%	$35,450,740	78.09%
13121	C/KELV N400H J ALAL V802	E	869	$649.95	$808.33	$600.16	$158.38	$208.17	$137,632	$180,900	79	83	4	$34,080,920	84.40%	25.32%	$35,631,640	78.49%
13017	C/KELV H510E J WHWH	L	518	$519.58	$778.04	$428.42	$258.46	$349.62	$133,882	$181,103	80	82	2	$34,214,802	84.74%	25.64%	$35,812,743	78.89%
13201	C/SHACK N400H H WWWW V802	E	875	$656.06	$808.33	$584.02	$152.27	$224.31	$133,236	$196,271	81	76	5	$34,348,038	85.07%	25.96%	$36,009,014	79.32%
12976	C/FRIG C250T J WHWH	L	788	$409.64	$573.71	$337.91	$164.07	$235.80	$129,287	$185,810	82	81	1	$34,477,325	85.39%	26.28%	$36,194,824	79.73%
15818	C/F&P H701E J WHWH V812	E	457	$601.91	$884.53	$489.10	$282.62	$395.43	$129,157	$180,712	83	84	1	$34,606,482	85.71%	26.60%	$36,375,536	80.13%
13040	C/F&P C370 H WWWW	L	371	$396.04	$734.97	$353.96	$338.93	$381.01	$125,743	$141,355	84	96	12	$34,732,225	86.02%	26.92%	$36,516,891	80.44%
12914	C/F&P N405T H WWWW V812	E	413	$546.06	$847.01	$500.37	$300.95	$346.64	$124,292	$143,162	85	95	10	$34,856,517	86.32%	27.24%	$36,660,053	80.76%
13025	C/FRIG H220E J WHWH	L	1272	$359.22	$456.77	$318.96	$97.55	$137.81	$124,084	$175,294	86	86	0	$34,980,601	86.63%	27.56%	$36,835,347	81.14%
13146	C/KELV C250T J WHWH V802	E	1410	$398.47	$483.33	$338.65	$84.86	$144.68	$119,653	$203,999	87	72	15	$35,100,254	86.93%	27.88%	$37,039,346	81.59%
12522	C/SHACK H701SL J WHWH V802	E	881	$554.22	$690.00	$439.57	$135.78	$250.43	$119,622	$220,629	88	68	20	$35,219,876	87.22%	28.21%	$37,259,975	82.08%
13114	C/KELV N375T J WHWH V802	E	621	$508.56	$700.00	$512.25	$191.44	$187.75	$118,884	$116,593	89	106	17	$35,338,760	87.52%	28.53%	$37,376,568	82.33%
12970	C/FRIG P120 J WHWH	L	1327	$269.72	$359.21	$212.46	$89.49	$146.75	$118,753	$194,737	90	77	13	$35,457,513	87.81%	28.85%	$37,571,305	82.76%
12981	C/SHACK C190 J WHWH	L	1089	$295.84	$402.59	$264.29	$106.75	$138.30	$116,251	$150,609	91	93	2	$35,573,764	88.10%	29.17%	$37,721,914	83.09%
15860	C/F&P C170T J WHWH V812	E	1090	$315.10	$416.09	$304.33	$100.99	$111.76	$110,079	$121,818	92	103	11	$35,683,843	88.37%	29.49%	$37,843,732	83.36%
15831	C/FRIG C380B J SASA	L	325	$503.35	$839.06	$461.07	$335.71	$377.99	$109,106	$122,847	93	101	8	$35,792,949	88.64%	29.81%	$37,966,579	83.63%
12972	C/FRIG F160 J WHWH	L	927	$342.67	$459.75	$288.31	$117.08	$171.44	$108,533	$158,925	94	90	4	$35,901,482	88.91%	30.13%	$38,125,504	83.98%

Appendix No. 3

CUMULATIVE PROFITS BASED ON EACH COSTING MODEL
PRODUCTS RANKED IN CUMULATIVE ABC MARGIN ORDER

PART No.	DESCRIPTION	EXP OR LOC	FCAST USAGE	TOTAL ABC COST	SELLING PRICE	STD F&P COST	MARGIN ABC	MARGIN F&P	TOTAL ABC MARGIN	TOTAL F&P MARGIN	ABC RANK	F&P RANK	VAR RANK	CUMULATIVE ABC MARGIN	PERCENT CUM ABC MAR	PERCENT PRODUCTS	CUMULATIVE F&P MARGIN	PERCENT CUM F&P MAR
15813	C/SHACK C365H J WHWH	L	427	$441.51	$691.74	$426.02	$250.23	$265.72	$106,848	$113,462	95	107	12	$36,008,330	89.18%	30.45%	$38,238,966	84.23%
13218	C/KELV N400H J SASA V802	E	725	$663.33	$808.33	$597.28	$145.00	$211.05	$105,125	$153,011	96	91	5	$36,113,455	89.44%	30.77%	$38,391,977	84.57%
12887	C/SHACK C390T J WHWH	L	417	$438.58	$687.40	$432.05	$248.82	$255.35	$103,758	$106,481	97	110	13	$36,217,213	89.69%	31.09%	$38,498,458	84.80%
12888	C/SHACK N375T J WHWH	L	372	$507.82	$776.00	$507.49	$268.18	$268.51	$99,763	$99,886	98	115	17	$36,316,976	89.94%	31.41%	$38,598,344	85.02%
13042	C/F&P C335T H WWWW	L	322	$439.01	$747.19	$409.78	$308.18	$337.41	$99,234	$108,646	99	109	10	$36,416,210	90.19%	31.73%	$38,706,990	85.26%
13129	C/KELV C390T J WHWH V802	E	495	$431.26	$630.00	$431.45	$198.74	$198.55	$98,376	$98,282	100	116	16	$36,514,586	90.43%	32.05%	$38,805,272	85.48%
15354	C/F&P N400H H WWWW	L	218	$636.54	$1,077.49	$566.88	$440.95	$510.61	$96,127	$111,313	101	108	7	$36,610,713	90.67%	32.37%	$38,916,585	85.73%
13013	C/KELV H160E J WHWH	L	1982	$346.74	$394.91	$298.93	$48.17	$95.98	$95,473	$190,232	102	78	24	$36,706,186	90.91%	32.69%	$39,106,817	86.14%
15816	C/F&P H360E J WHWH V812	E	952	$417.99	$517.28	$370.16	$99.29	$147.12	$94,524	$140,058	103	97	6	$36,800,710	91.14%	33.01%	$39,246,875	86.45%
13039	C/F&P F310 H WWWW	L	358	$423.73	$686.08	$397.20	$262.35	$288.88	$93,921	$103,419	104	113	9	$36,894,631	91.37%	33.33%	$39,350,294	86.68%
13047	C/F&P C410B H WWWW	L	226	$492.36	$906.39	$473.98	$414.03	$432.41	$93,571	$97,725	105	117	12	$36,988,202	91.60%	33.65%	$39,448,019	86.90%
13027	C/FRIG H510E J WHWH	L	351	$514.82	$778.04	$428.26	$263.22	$349.78	$92,390	$122,773	106	102	4	$37,080,592	91.83%	33.97%	$39,570,792	87.17%
13018	C/KELV H701E J WHWH	L	273	$602.04	$932.71	$491.38	$330.67	$441.33	$90,273	$120,483	107	104	3	$37,170,865	92.06%	34.29%	$39,691,275	87.43%
12519	C/SHACK H360SL J WHWH V810	E	1428	$408.53	$471.25	$339.47	$62.72	$131.78	$89,564	$188,182	108	79	29	$37,260,429	92.28%	34.62%	$39,879,457	87.85%
15858	C/F&P C190 J WHWH V812	E	667	$274.78	$408.24	$257.66	$133.46	$150.58	$89,018	$100,437	109	114	5	$37,349,447	92.50%	34.94%	$39,979,894	88.07%
12985	C/SHACK C270 J WHWH	L	724	$347.23	$469.36	$306.94	$122.13	$162.42	$88,422	$117,592	110	105	5	$37,437,869	92.72%	35.26%	$40,097,486	88.33%
12869	C/KELV C370 J SASA	L	275	$414.68	$734.97	$354.50	$320.29	$380.47	$88,080	$104,629	111	111	0	$37,525,949	92.94%	35.58%	$40,202,115	88.56%
13115	C/KELV N395B J WHWH V802	E	372	$533.89	$770.00	$546.64	$236.11	$223.36	$87,833	$83,090	112	128	16	$37,613,782	93.15%	35.90%	$40,285,205	88.74%
12867	C/FRIG N395B J SASA	L	203	$584.64	$998.05	$542.04	$413.41	$456.01	$83,922	$92,570	113	121	8	$37,697,704	93.36%	36.22%	$40,377,775	88.94%
13187	C/KELV N375T J WHWH V803	E	492	$529.67	$700.00	$519.15	$170.33	$180.85	$83,802	$88,978	114	125	11	$37,781,506	93.57%	36.54%	$40,466,753	89.14%
13189	C/KELV N400H J WHWH V803	E	435	$618.28	$808.33	$595.55	$190.05	$212.78	$82,672	$92,559	115	122	7	$37,864,178	93.77%	36.86%	$40,559,312	89.34%
15825	C/F&P H360S J WHWH V812	E	948	$387.37	$474.54	$333.36	$87.17	$141.18	$82,637	$133,839	116	98	18	$37,946,815	93.98%	37.18%	$40,693,151	89.64%
12520	C/SHACK H510SL J WHWH V810	E	1021	$507.46	$585.00	$400.86	$77.54	$184.14	$79,168	$188,007	117	80	37	$38,025,983	94.17%	37.50%	$40,881,158	90.05%
15817	C/F&P H510E J WHWH V812	E	485	$519.50	$681.27	$426.14	$161.77	$255.13	$78,458	$123,738	118	100	18	$38,104,441	94.37%	37.82%	$41,004,896	90.33%
13154	C/KELV N405T J WHWH V803	E	377	$553.66	$753.33	$534.78	$199.67	$218.55	$75,276	$82,393	119	129	10	$38,179,717	94.55%	38.14%	$41,087,289	90.51%
13169	C/SHACK N375T H WWWW V802	E	497	$553.20	$700.00	$513.51	$146.80	$186.49	$72,960	$92,686	120	120	0	$38,252,677	94.74%	38.46%	$41,179,975	90.71%
13119	C/KELV N395B J ALAL V802	E	325	$548.85	$770.00	$546.86	$221.15	$223.14	$71,874	$72,521	121	142	21	$38,324,551	94.91%	38.78%	$41,252,496	90.87%
15352	C/F&P N375T H WWWW	L	225	$613.05	$924.61	$573.00	$311.56	$351.61	$70,101	$79,112	122	134	12	$38,394,652	95.09%	39.10%	$41,331,608	91.05%
15811	C/F&P C365H H WWWW V812	E	310	$464.13	$689.13	$405.26	$225.00	$283.87	$69,750	$88,000	123	126	3	$38,464,402	95.26%	39.42%	$41,419,608	91.24%
13021	C/SHACK H360E J WHWH	L	710	$421.18	$518.88	$372.53	$97.70	$146.35	$69,367	$103,909	124	112	12	$38,533,769	95.43%	39.74%	$41,523,517	91.47%
13124	C/KELV F310 J WHWH V802	E	500	$405.23	$541.67	$395.35	$136.44	$146.32	$68,220	$73,160	125	141	16	$38,601,989	95.60%	40.06%	$41,596,677	91.63%
15875	C/KELV N369B J SASA	L	180	$564.00	$930.71	$515.19	$366.71	$415.52	$66,008	$74,794	126	138	12	$38,667,997	95.76%	40.38%	$41,671,471	91.79%
12988	C/SHACK F230 J WHWH	L	543	$353.60	$474.61	$335.82	$121.01	$138.79	$65,708	$75,363	127	137	10	$38,733,705	95.93%	40.71%	$41,746,834	91.96%
13203	C/SHACK N405T J ALAL V802	E	377	$580.44	$753.33	$543.07	$172.89	$210.26	$65,180	$79,268	128	133	5	$38,798,885	96.09%	41.03%	$41,826,102	92.13%
13041	C/F&P C365H H WWWW	L	180	$466.81	$826.63	$411.64	$359.82	$414.99	$64,768	$74,698	129	139	10	$38,863,653	96.25%	41.35%	$41,900,800	92.30%
13103	C/KELV C380B J WHWH V802	E	299	$431.46	$646.67	$444.49	$215.21	$202.18	$64,348	$60,452	130	152	22	$38,928,001	96.41%	41.67%	$41,961,252	92.43%
13118	C/KELV N375T J ALAL V802	E	492	$572.50	$700.00	$518.90	$127.50	$181.10	$62,730	$89,101	131	124	7	$38,990,731	96.56%	41.99%	$42,050,353	92.63%
12516	C/SHARP H220EL J WHWH V810	E	4265	$363.77	$378.33	$321.52	$14.56	$56.81	$62,098	$242,295	132	63	69	$39,052,829	96.72%	42.31%	$42,292,648	93.16%
13024	C/FRIG H160E J WHWH	L	1343	$349.04	$394.91	$298.77	$45.87	$96.14	$61,603	$129,116	133	99	34	$39,114,432	96.87%	42.63%	$42,421,764	93.45%
13028	C/FRIG H701E J WHWH	L	185	$608.47	$932.71	$491.06	$324.24	$441.65	$59,984	$81,705	134	130	4	$39,174,416	97.02%	42.95%	$42,503,469	93.63%
13043	C/F&P C390T H WWWW	L	166	$471.67	$820.73	$431.47	$349.06	$389.26	$57,944	$64,617	135	146	11	$39,232,360	97.16%	43.27%	$42,568,086	93.77%
15827	C/FRIG C370 J SASA	L	167	$425.84	$734.97	$355.23	$309.13	$379.74	$51,625	$63,417	136	147	11	$39,283,985	97.29%	43.59%	$42,631,503	93.91%
15859	C/F&P F160 J WHWH V812	E	832	$340.48	$400.39	$286.15	$59.91	$114.24	$49,845	$95,048	137	119	18	$39,333,830	97.41%	43.91%	$42,726,551	94.12%
13216	C/KELV N395B J SASA V802	E	263	$583.14	$770.00	$546.70	$186.86	$223.30	$49,144	$58,728	138	153	15	$39,382,974	97.53%	44.23%	$42,785,279	94.25%
12525	C/SHACK H360SL J WHWH V802	E	766	$392.86	$456.67	$336.99	$63.81	$119.68	$48,878	$91,675	139	123	16	$39,431,852	97.66%	44.55%	$42,876,954	94.45%
15824	C/F&P H220S J WHWH V812	E	1124	$323.51	$365.50	$280.93	$41.99	$84.57	$47,197	$95,057	140	118	22	$39,479,049	97.77%	44.87%	$42,972,011	94.66%
12868	C/KELV F310 J SASA	L	201	$456.68	$686.08	$397.68	$229.40	$288.40	$46,109	$57,968	141	154	13	$39,525,158	97.89%	45.19%	$43,029,979	94.79%

Appendix No. 3

CUMULATIVE PROFITS BASED ON EACH COSTING MODEL PRODUCTS RANKED IN CUMULATIVE ABC MARGIN ORDER

PART No.	DESCRIPTION	EXP OR LOC	FCAST USAGE	TOTAL ABC COST	SELLING PRICE	STD F&P COST	MARGIN ABC	MARGIN F&P	TOTAL ABC MARGIN	TOTAL F&P MARGIN	ABC RANK	F&P RANK	VAR RANK	CUMULATIVE ABC MARGIN	PERCENT CUM ABC MAR	PERCENT PRODUCTS	CUMULATIVE F&P MARGIN	PERCENT CUM F&P MAR
15815	C/F&P H220E J WHWH V812	E	1089	$355.48	$397.78	$317.24	$42.30	$80.54	$46,065	$87,708	142	127	15	$39,571,223	98.00%	45.51%	$43,117,687	94.98%
13022	C/SHACK H510E J WHWH	L	301	$522.05	$673.88	$428.35	$151.83	$245.53	$45,701	$73,905	143	140	3	$39,616,924	98.11%	45.83%	$43,191,592	95.14%
13116	C/KELV N405T J WHWH V802	E	189	$532.01	$753.33	$526.80	$221.32	$226.53	$41,829	$42,814	144	157	13	$39,658,753	98.22%	46.15%	$43,234,406	95.24%
13104	C/KELV C410B J WHWH V802	E	202	$460.59	$665.00	$474.69	$204.41	$190.31	$41,291	$38,443	145	158	13	$39,700,044	98.32%	46.47%	$43,272,849	95.32%
13215	C/KELV N375T J SASA V802	E	369	$590.75	$700.00	$517.38	$109.25	$182.62	$40,313	$67,387	146	144	2	$39,740,357	98.42%	46.79%	$43,340,236	95.47%
13023	C/SHACK H701E J WHWH	L	195	$605.49	$808.49	$491.78	$203.00	$316.71	$39,585	$61,758	147	151	4	$39,779,942	98.52%	47.12%	$43,401,994	95.61%
13176	C/SHACK C250T J FAFA V802	E	542	$411.68	$483.33	$333.17	$71.65	$150.16	$38,834	$81,387	148	131	17	$39,818,776	98.61%	47.44%	$43,483,381	95.79%
13217	C/KELV N405T J SASA V802	E	315	$631.31	$753.33	$531.93	$122.02	$221.40	$38,436	$69,741	149	143	6	$39,857,212	98.71%	47.76%	$43,553,122	95.94%
15866	C/KELV C389T J WHWH	L	109	$419.83	$771.81	$421.90	$351.98	$349.91	$38,366	$38,140	150	160	10	$39,895,578	98.80%	48.08%	$43,591,262	96.02%
12982	C/SHACK F160 J WHWH	L	581	$340.97	$397.29	$288.61	$56.32	$108.68	$32,722	$63,143	151	148	3	$39,928,300	98.88%	48.40%	$43,654,405	96.16%
12524	C/SHACK H220SL J WHWH V802	E	697	$329.28	$375.00	$285.16	$45.72	$89.84	$31,867	$62,618	152	150	2	$39,960,167	98.96%	48.72%	$43,717,023	96.30%
15876	C/FRIG N369B J SASA	L	120	$574.93	$835.16	$515.83	$260.23	$319.33	$31,228	$38,320	153	159	6	$39,991,395	99.04%	49.04%	$43,755,343	96.38%
12530	C/SHACK H360SL J WHWH V803	E	536	$399.14	$456.67	$339.78	$57.53	$116.89	$30,836	$62,653	154	149	5	$40,022,231	99.12%	49.36%	$43,817,996	96.52%
12526	C/SHACK H510SL J WHWH V802	E	489	$494.24	$555.00	$395.94	$60.76	$159.06	$29,712	$77,780	155	135	20	$40,051,943	99.19%	49.68%	$43,895,776	96.69%
15826	C/FRIG F310 J SASA	L	129	$460.56	$686.08	$397.38	$225.52	$288.70	$29,092	$37,242	156	161	5	$40,081,035	99.26%	50.00%	$43,933,018	96.78%
13177	C/SHACK C170T J FAFA V802	E	262	$319.39	$425.00	$304.78	$105.61	$120.22	$27,670	$31,498	157	163	6	$40,108,705	99.33%	50.32%	$43,964,516	96.85%
13191	C/KELV C420T J WHWH V802	E	122	$451.44	$648.33	$445.19	$196.89	$203.14	$24,021	$24,783	158	168	10	$40,132,726	99.39%	50.64%	$43,989,299	96.90%
13106	C/FRIG C170T J WHWH V802	E	241	$325.37	$425.00	$302.71	$99.63	$122.29	$24,011	$29,472	159	164	5	$40,156,737	99.45%	50.96%	$44,018,771	96.96%
15836	C/KELV C365H J SASA	L	68	$478.99	$826.63	$427.29	$347.64	$399.34	$23,640	$27,155	160	167	7	$40,180,377	99.51%	51.28%	$44,045,926	97.02%
15865	C/FRIG C389T J WHWH	L	68	$432.18	$771.81	$421.64	$339.63	$350.17	$23,095	$23,812	161	171	10	$40,203,472	99.57%	51.60%	$44,069,738	97.08%
13165	C/SHACK C390T H WWWW V802	E	149	$475.69	$630.00	$435.76	$154.31	$194.24	$22,992	$28,942	162	165	3	$40,226,464	99.62%	51.92%	$44,098,680	97.14%
13020	C/SHACK H220E J WHWH	L	580	$357.71	$395.88	$319.13	$38.17	$76.75	$22,139	$44,515	163	156	7	$40,248,603	99.68%	52.24%	$44,143,195	97.24%
13155	C/KELV N395B J WHWH V803	E	98	$558.07	$770.00	$547.87	$211.93	$222.13	$20,769	$21,769	164	175	11	$40,269,372	99.73%	52.56%	$44,164,964	97.29%
13157	C/KELV C335T J WHWH V803	E	112	$384.32	$551.67	$378.03	$167.35	$173.64	$18,743	$19,448	165	183	18	$40,288,115	99.78%	52.88%	$44,184,412	97.33%
13198	C/KELV C190 J WHWH V802	E	181	$275.88	$375.00	$258.66	$99.12	$116.34	$17,941	$21,058	166	177	11	$40,306,056	99.82%	53.21%	$44,205,470	97.38%
13164	C/SHACK C380B H WWWW V802	E	114	$493.75	$646.67	$469.06	$152.92	$177.61	$17,433	$20,248	167	181	14	$40,323,489	99.86%	53.53%	$44,225,718	97.42%
13186	C/KELV C380B J WHWH V803	E	82	$439.69	$646.67	$439.52	$206.98	$207.15	$16,972	$16,986	168	186	18	$40,340,461	99.91%	53.85%	$44,242,704	97.46%
13162	C/SHACK C335T H WWWW V802	E	148	$443.18	$551.67	$411.60	$108.49	$140.07	$16,057	$20,730	169	179	10	$40,356,518	99.95%	54.17%	$44,263,434	97.50%
13168	C/SHACK F310 H WWWW V802	E	140	$427.39	$541.67	$395.14	$114.28	$146.53	$15,999	$20,514	170	180	10	$40,372,517	99.99%	54.49%	$44,283,948	97.55%
13108	C/FRIG C335T J WHWH V802	E	116	$416.63	$551.67	$408.87	$135.04	$142.80	$15,665	$16,565	171	188	17	$40,388,182	100.02%	54.81%	$44,300,513	97.59%
13253	C/LEON C335T J SASA V802	E	152	$450.39	$551.67	$411.83	$101.28	$139.84	$15,395	$21,256	172	176	4	$40,403,577	100.06%	55.13%	$44,321,769	97.63%
12980	C/SHACK P120 J WHWH	L	779	$291.88	$310.32	$213.36	$18.44	$96.96	$14,365	$75,532	173	136	37	$40,417,942	100.10%	55.45%	$44,397,301	97.80%
13199	C/KELV C270 J WHWH V802	E	123	$331.06	$446.67	$298.56	$115.61	$148.11	$14,220	$18,218	174	184	10	$40,432,162	100.13%	55.77%	$44,415,519	97.84%
12506	C/KELV H360EL J WHWH V802	E	200	$422.96	$491.67	$374.08	$68.71	$117.59	$13,742	$23,518	175	172	3	$40,445,904	100.17%	56.09%	$44,439,037	97.89%
13166	C/SHACK C410B H WWWW V802	E	81	$496.49	$665.00	$475.80	$168.51	$189.20	$13,649	$15,325	176	190	14	$40,459,553	100.20%	56.41%	$44,454,362	97.92%
15828	C/FRIG C365H J SASA	L	42	$508.47	$826.63	$425.63	$318.16	$401.00	$13,363	$16,842	177	187	10	$40,472,916	100.23%	56.73%	$44,471,204	97.96%
12535	C/KELV H220SL J WHWH V803	E	272	$332.10	$375.00	$286.48	$42.90	$88.52	$11,669	$24,077	178	170	8	$40,484,585	100.26%	57.05%	$44,495,281	98.01%
12508	C/KELV H510EL J WHWH V802	E	130	$513.65	$600.00	$429.53	$86.35	$170.47	$11,226	$22,161	179	174	5	$40,495,811	100.29%	57.37%	$44,517,442	98.06%
13109	C/FRIG C390T J WHWH V802	E	61	$446.74	$630.00	$431.95	$183.26	$198.05	$11,179	$12,081	180	199	19	$40,506,990	100.32%	57.69%	$44,529,523	98.09%
13188	C/KELV C410B J WHWH V803	E	54	$469.34	$665.00	$470.84	$195.66	$194.16	$10,566	$10,485	181	201	20	$40,517,556	100.34%	58.01%	$44,540,008	98.11%
12512	C/KELV H360EL J WHWH V810	E	287	$445.01	$481.67	$382.26	$36.66	$99.41	$10,521	$28,531	182	166	16	$40,528,077	100.37%	58.33%	$44,568,539	98.18%
12531	C/SHACK H701SL J WHWH V803	E	104	$590.03	$690.00	$455.39	$99.97	$234.61	$10,397	$24,399	183	169	14	$40,538,474	100.40%	58.65%	$44,592,938	98.23%
13179	C/FRIG C380B J WHWH V802	E	54	$467.13	$646.67	$467.86	$179.54	$178.81	$9,695	$9,656	184	208	24	$40,548,169	100.42%	58.97%	$44,602,594	98.25%
13163	C/SHACK C370 H WWWW V802	E	73	$403.50	$533.33	$358.43	$129.83	$174.90	$9,478	$12,768	185	198	13	$40,557,647	100.44%	59.29%	$44,615,362	98.28%
13135	C/LEON C335T J ALAL V802	E	264	$516.45	$551.67	$413.35	$35.22	$138.32	$9,298	$36,516	186	162	24	$40,566,945	100.47%	59.62%	$44,651,878	98.36%
15867	C/SHACK C370 J WH	L	40	$275.99	$505.95	$263.24	$229.96	$242.71	$9,198	$9,708	187	207	20	$40,576,143	100.49%	59.94%	$44,661,586	98.38%
13122	C/KELV F160 J WHWH V802	E	214	$340.42	$383.33	$285.56	$42.91	$97.77	$9,183	$20,923	188	178	10	$40,585,326	100.51%	60.26%	$44,682,509	98.43%

Appendix No. 3

CUMULATIVE PROFITS BASED ON EACH COSTING MODEL
PRODUCTS RANKED IN CUMULATIVE ABC MARGIN ORDER

PART No.	DESCRIPTION	EXP OR LOC	FCAST USAGE	TOTAL ABC COST	SELLING PRICE	STD F&P COST	MARGIN ABC	MARGIN F&P	TOTAL ABC MARGIN	TOTAL F&P MARGIN	ABC RANK	F&P RANK	VAR RANK	CUMULATIVE ABC MARGIN	PERCENT CUM ABC MAR	PERCENT PRODUCTS	CUMULATIVE F&P MARGIN	PERCENT CUM F&P MAR
12871	C/KELV C335T J SASA	L	30	$447.83	$747.19	$416.47	$299.36	$330.72	$8,981	$9,922	189	205	16	$40,594,307	100.53%	60.58%	$44,692,431	98.45%
13123	C/KELV F230 J WHWH V802	E	81	$353.07	$458.33	$332.77	$105.26	$125.56	$8,526	$10,170	190	204	14	$40,602,833	100.56%	60.90%	$44,702,601	98.47%
13100	C/KELV P120 J WHWH V802	E	271	$255.46	$286.67	$212.42	$31.21	$74.25	$8,458	$20,122	191	182	9	$40,611,291	100.58%	61.22%	$44,722,723	98.52%
15873	C/SHACK C120 J WH	L	104	$205.68	$281.95	$180.97	$76.27	$100.98	$7,932	$10,502	192	200	8	$40,619,223	100.60%	61.54%	$44,733,225	98.54%
12542	C/FRIG H701EL J WHWH V813	E	52	$616.50	$761.52	$492.15	$145.02	$269.37	$7,541	$14,007	193	194	1	$40,626,764	100.61%	61.86%	$44,747,232	98.57%
12505	C/KELV H220EL J WHWH V802	E	174	$360.47	$403.33	$321.10	$42.86	$82.23	$7,458	$14,308	194	192	2	$40,634,222	100.63%	62.18%	$44,761,540	98.60%
13180	C/FRIG C410B J WHWH V802	E	36	$473.30	$665.00	$475.46	$191.70	$189.54	$6,901	$6,823	195	218	23	$40,641,123	100.65%	62.50%	$44,768,363	98.62%
15840	C/KELV C410B J SASA	L	17	$508.37	$906.39	$477.71	$398.02	$428.68	$6,766	$7,288	196	213	17	$40,647,889	100.67%	62.82%	$44,775,651	98.63%
15874	C/F&P P120 J WHWH V812	E	168	$259.19	$295.72	$212.78	$36.53	$82.94	$6,137	$13,934	197	195	2	$40,654,026	100.68%	63.14%	$44,789,585	98.66%
13254	C/LEON N400H J SASA V814	E	45	$672.73	$808.33	$604.17	$135.60	$204.16	$6,102	$9,187	198	210	12	$40,660,128	100.70%	63.46%	$44,798,772	98.68%
12879	C/KELV N400H J SASA	L	14	$647.02	$1,077.49	$584.82	$430.47	$492.67	$6,027	$6,897	199	217	18	$40,666,155	100.71%	63.78%	$44,805,669	98.70%
13127	C/FRIG F310 J WHWH V802	E	47	$413.65	$541.67	$394.81	$128.02	$146.86	$6,017	$6,902	200	216	16	$40,672,172	100.73%	64.10%	$44,812,571	98.71%
12532	C/SHACK H510SL J WHWH V803	E	147	$515.33	$555.00	$398.01	$39.67	$156.99	$5,831	$23,078	201	173	28	$40,678,003	100.74%	64.42%	$44,835,649	98.76%
15829	C/FRIG C335T J SASA	L	20	$461.04	$747.19	$415.75	$286.15	$331.44	$5,723	$6,629	202	219	17	$40,683,726	100.76%	64.74%	$44,842,278	98.78%
12527	C/SHARP H360EL J WHWH V810	E	659	$445.34	$453.33	$374.47	$7.99	$78.86	$5,265	$51,969	203	155	48	$40,688,991	100.77%	65.06%	$44,894,247	98.89%
13182	C/KELV C170T J WHWH V803	E	51	$327.16	$425.00	$306.32	$97.84	$118.68	$4,990	$6,053	204	221	17	$40,693,981	100.78%	65.38%	$44,900,300	98.91%
13181	C/KELV C365H J WHWH V802	E	37	$478.69	$613.33	$426.23	$134.64	$187.10	$4,982	$6,923	205	215	10	$40,698,963	100.79%	65.71%	$44,907,223	98.92%
13107	C/FRIG C250T J WHWH V802	E	65	$412.98	$483.33	$335.30	$70.35	$148.03	$4,573	$9,622	206	209	3	$40,703,536	100.80%	66.03%	$44,916,845	98.94%
13200	C/SHACK C420T H WWWW V802	E	30	$497.24	$648.33	$446.49	$151.09	$201.84	$4,533	$6,055	207	220	13	$40,708,069	100.82%	66.35%	$44,922,900	98.96%
13255	C/LEON N375T J SASA V814	E	45	$599.30	$700.00	$523.03	$100.70	$176.97	$4,532	$7,964	208	212	4	$40,712,601	100.83%	66.67%	$44,930,864	98.97%
15834	C/FRIG C410B J SASA	L	11	$514.81	$906.39	$472.26	$391.58	$434.13	$4,307	$4,775	209	227	18	$40,716,908	100.84%	66.99%	$44,935,639	98.98%
12874	C/KELV N375T J SASA	L	12	$581.62	$924.61	$512.78	$342.99	$411.83	$4,116	$4,942	210	226	16	$40,721,024	100.85%	67.31%	$44,940,581	99.00%
13183	C/KELV C250T J WHWH V803	E	48	$404.86	$483.33	$334.82	$78.47	$148.51	$3,767	$7,128	211	214	3	$40,724,791	100.86%	67.63%	$44,947,709	99.01%
13125	C/FRIG F160 J WHWH V802	E	100	$346.24	$383.33	$285.37	$37.09	$97.96	$3,709	$9,796	212	206	6	$40,728,500	100.87%	67.95%	$44,957,505	99.03%
12865	C/FRIG N400H J SASA	L	8	$681.49	$1,077.49	$584.43	$396.00	$493.06	$3,168	$3,944	213	233	20	$40,731,668	100.87%	68.27%	$44,961,449	99.04%
13130	C/LEON C335T J WHWH V802	E	20	$401.99	$551.67	$406.69	$149.68	$144.98	$2,994	$2,900	214	244	30	$40,734,662	100.88%	68.59%	$44,964,349	99.05%
15869	C/SHACK F310 J WH	L	20	$300.89	$450.33	$296.63	$149.44	$153.70	$2,989	$3,074	215	241	26	$40,737,651	100.89%	68.91%	$44,967,423	99.05%
13230	C/KELV N400H J WHWH V814	E	46	$601.98	$663.33	$594.33	$61.35	$69.00	$2,822	$3,174	216	240	24	$40,740,473	100.90%	69.23%	$44,970,597	99.06%
13252	C/LEON C250T J FAFA V802	E	30	$389.28	$483.33	$325.04	$94.05	$158.29	$2,821	$4,749	217	228	11	$40,743,294	100.90%	69.55%	$44,975,346	99.07%
15870	C/SHACK H360 J WH	L	35	$359.60	$439.28	$289.14	$79.68	$150.14	$2,789	$5,255	218	224	6	$40,746,083	100.91%	69.87%	$44,980,601	99.08%
12860	C/FRIG N375T J SASA	L	8	$593.81	$924.61	$510.80	$330.80	$413.81	$2,646	$3,310	219	238	19	$40,748,729	100.92%	70.19%	$44,983,911	99.09%
12540	C/FRIG H360EL J WHWH V813	E	96	$460.51	$487.19	$379.21	$26.68	$107.98	$2,561	$10,366	220	202	18	$40,751,290	100.92%	70.51%	$44,994,277	99.11%
13170	C/SHACK N395B H WWWW V802	E	13	$573.51	$770.00	$548.03	$196.49	$221.97	$2,554	$2,886	221	245	24	$40,753,844	100.93%	70.83%	$44,997,163	99.12%
15837	C/KELV C390T J SASA	L	8	$512.09	$820.73	$437.08	$308.64	$383.65	$2,469	$3,069	222	242	20	$40,756,313	100.94%	71.15%	$45,000,232	99.13%
12538	C/KELV H360EL J WHWH V803	E	38	$428.23	$491.67	$375.82	$63.44	$115.85	$2,411	$4,402	223	230	7	$40,758,724	100.94%	71.47%	$45,004,634	99.14%
12528	C/SHACK H160SL J WHWH V803	E	127	$329.50	$348.33	$267.64	$18.83	$80.69	$2,391	$10,248	224	203	21	$40,761,115	100.95%	71.79%	$45,014,882	99.16%
13117	C/KELV N400H J WHWH V802	E	10	$594.51	$808.33	$587.07	$213.82	$221.26	$2,138	$2,213	225	257	32	$40,763,253	100.95%	72.12%	$45,017,095	99.16%
13126	C/FRIG F230 J WHWH V802	E	21	$361.42	$458.33	$332.58	$96.91	$125.75	$2,035	$2,641	226	249	23	$40,765,288	100.96%	72.44%	$45,019,736	99.17%
13147	C/LEON C170T J WHWH V802	E	18	$312.99	$425.00	$300.01	$112.01	$124.99	$2,016	$2,250	227	254	27	$40,767,304	100.96%	72.76%	$45,021,986	99.17%
13220	C/FRIG N395B J SASA V802	E	12	$604.50	$770.00	$547.69	$165.50	$222.31	$1,986	$2,668	228	248	20	$40,769,290	100.97%	73.08%	$45,024,654	99.18%
13144	C/FRIG C420T J WHWH V802	E	10	$467.12	$648.33	$445.36	$181.21	$202.97	$1,812	$2,030	229	262	33	$40,771,102	100.97%	73.40%	$45,026,684	99.19%
13012	C/SHACK H701S J WHWH V802	E	16	$560.52	$673.33	$451.88	$112.81	$221.45	$1,805	$3,543	230	234	4	$40,772,907	100.98%	73.72%	$45,030,227	99.19%
15830	C/FRIG C390T J SASA	L	6	$525.91	$820.73	$436.79	$294.82	$383.94	$1,769	$2,304	231	253	22	$40,774,676	100.98%	74.04%	$45,032,531	99.20%
12541	C/FRIG H510EL J WHWH V813	E	41	$539.16	$578.81	$435.39	$39.65	$143.42	$1,626	$5,880	232	222	10	$40,776,302	100.99%	74.36%	$45,038,411	99.21%
13149	C/LEON C410B J WHWH V802	E	8	$461.77	$665.00	$473.10	$203.23	$191.90	$1,626	$1,535	233	272	39	$40,777,928	100.99%	74.68%	$45,039,946	99.21%
13173	C/FRIG N395B J ALAL V802	E	8	$570.22	$770.00	$547.85	$199.78	$222.15	$1,598	$1,777	234	267	33	$40,779,526	100.99%	75.00%	$45,041,723	99.22%
13140	C/KELV C370 J WHWH V802	E	9	$370.32	$533.33	$356.55	$163.01	$176.78	$1,467	$1,591	235	271	36	$40,780,993	101.00%	75.32%	$45,043,314	99.22%

Appendix No. 3

CUMULATIVE PROFITS BASED ON EACH COSTING MODEL
PRODUCTS RANKED IN CUMULATIVE ABC MARGIN ORDER

PART No.	DESCRIPTION	EXP OR LOC	FCAST USAGE	TOTAL ABC COST	SELLING PRICE	STD F&P COST	MARGIN ABC	MARGIN F&P	TOTAL ABC MARGIN	TOTAL F&P MARGIN	ABC RANK	F&P RANK	VAR RANK	CUMULATIVE ABC MARGIN	PERCENT CUM ABC MAR	PERCENT PRODUCTS	CUMULATIVE F&P MARGIN	PERCENT CUM F&P MAR
13260	C/SHACK N405T H WWWW V814	E	8	$580.43	$753.33	$530.31	$172.90	$223.02	$1,383	$1,784	236	266	30	$40,782,376	101.00%	75.64%	$45,045,098	99.23%
13227	C/FRIG C190 J WHWH V802	E	17	$294.10	$375.00	$259.00	$80.90	$116.00	$1,375	$1,972	237	263	26	$40,783,751	101.00%	75.96%	$45,047,070	99.23%
13009	C/SHACK H360S J WHWH V802	E	25	$387.13	$440.00	$332.33	$52.87	$107.67	$1,322	$2,692	238	247	9	$40,785,073	101.01%	76.28%	$45,049,762	99.24%
13223	C/LEON C380B J WHWH V802	E	6	$432.50	$646.67	$442.80	$214.17	$203.87	$1,285	$1,223	239	278	39	$40,786,358	101.01%	76.60%	$45,050,985	99.24%
13264	C/SHACK N400H J ALAL V814	E	6	$606.44	$808.33	$553.04	$201.89	$255.29	$1,211	$1,532	240	273	33	$40,787,569	101.01%	76.92%	$45,052,517	99.24%
13148	C/LEON C390T J WHWH V802	E	6	$432.31	$630.00	$429.77	$197.69	$200.23	$1,186	$1,201	241	282	41	$40,788,755	101.02%	77.24%	$45,053,718	99.24%
13261	C/SHACK N400H H WWWW V814	E	8	$663.52	$808.33	$591.28	$144.81	$217.05	$1,158	$1,736	242	268	26	$40,789,913	101.02%	77.56%	$45,055,454	99.25%
13153	C/KELV F160 J WHWH V803	E	19	$342.94	$403.33	$286.22	$60.39	$117.11	$1,147	$2,225	243	255	12	$40,791,060	101.02%	77.88%	$45,057,679	99.25%
13006	C/KELV H701S J WHWH V802	E	10	$559.37	$673.33	$451.87	$113.96	$221.46	$1,140	$2,215	244	256	12	$40,792,200	101.02%	78.21%	$45,059,894	99.26%
12504	C/KELV H701SL J WHWH V802	E	9	$564.89	$690.00	$456.40	$125.11	$233.60	$1,126	$2,102	245	259	14	$40,793,326	101.03%	78.53%	$45,061,996	99.26%
13202	C/SHACK N395B J ALAL V802	E	5	$555.11	$770.00	$541.48	$214.89	$228.52	$1,074	$1,143	246	284	38	$40,794,400	101.03%	78.85%	$45,063,139	99.27%
13263	C/SHACK N405T J ALAL V814	E	6	$587.91	$753.33	$550.33	$165.42	$203.00	$993	$1,218	247	280	33	$40,795,393	101.03%	79.17%	$45,064,357	99.27%
12502	C/KELV H360SL J WHWH V802	E	15	$392.49	$456.67	$337.32	$64.18	$119.35	$963	$1,790	248	265	17	$40,796,356	101.03%	79.49%	$45,066,147	99.27%
13008	C/SHACK H220S J WHWH V802	E	27	$323.76	$358.33	$280.63	$34.57	$77.70	$933	$2,098	249	260	11	$40,797,289	101.04%	79.81%	$45,068,245	99.28%
13258	C/SHACK N395B J SASA V802	E	5	$589.40	$770.00	$541.32	$180.60	$228.68	$903	$1,143	250	285	35	$40,798,192	101.04%	80.13%	$45,069,388	99.28%
12539	C/KELV H510EL J WHWH V803	E	16	$544.06	$600.00	$430.88	$55.94	$169.12	$895	$2,706	251	246	5	$40,799,087	101.04%	80.45%	$45,072,094	99.29%
13212	C/LEON C365H J WHWH V802	E	5	$440.94	$613.33	$422.84	$172.39	$190.49	$862	$952	252	291	39	$40,799,949	101.04%	80.77%	$45,073,046	99.29%
13267	C/SHACK N400H J SASA V814	E	6	$670.81	$808.33	$604.53	$137.52	$203.80	$825	$1,223	253	279	26	$40,800,774	101.05%	81.09%	$45,074,269	99.29%
12536	C/KELV H160SL J WHWH V803	E	43	$329.24	$348.33	$267.64	$19.09	$80.69	$821	$3,470	254	235	19	$40,801,595	101.05%	81.41%	$45,077,739	99.30%
13151	C/KELV P120 J WHWH V803	E	40	$266.37	$286.67	$213.66	$20.30	$73.01	$812	$2,920	255	243	12	$40,802,407	101.05%	81.73%	$45,080,659	99.30%
13005	C/KELV H510S J WHWH V802	E	16	$488.09	$538.33	$391.43	$50.24	$146.90	$804	$2,350	256	252	4	$40,803,211	101.05%	82.05%	$45,083,009	99.31%
12509	C/KELV H701EL J WHWH V802	E	5	$605.99	$758.33	$492.46	$152.34	$265.87	$762	$1,329	257	275	18	$40,803,973	101.05%	82.37%	$45,084,338	99.31%
13152	C/LEON C250T J WHWH V802	E	8	$393.97	$483.33	$331.69	$89.36	$151.64	$715	$1,213	258	281	23	$40,804,688	101.06%	82.69%	$45,085,551	99.31%
12501	C/KELV H220SL J WHWH V802	E	15	$328.49	$375.00	$284.77	$46.51	$90.23	$698	$1,353	259	274	15	$40,805,386	101.06%	83.01%	$45,086,904	99.32%
13259	C/SHACK N375T H WWWW V814	E	5	$560.67	$700.00	$520.77	$139.33	$179.23	$697	$896	260	292	32	$40,806,083	101.06%	83.33%	$45,087,800	99.32%
13011	C/SHACK H510S J WHWH V802	E	14	$488.80	$538.33	$391.43	$49.53	$146.90	$693	$2,057	261	261	0	$40,806,776	101.06%	83.65%	$45,089,857	99.32%
12500	C/KELV H160SL J WHWH V802	E	42	$324.59	$341.00	$264.89	$16.41	$76.11	$689	$3,197	262	239	23	$40,807,465	101.06%	83.97%	$45,093,054	99.33%
13228	C/KELV N375T J WHWH V814	E	39	$516.03	$533.33	$519.50	$17.30	$13.83	$675	$539	263	298	35	$40,808,140	101.06%	84.29%	$45,093,593	99.33%
15871	C/SHACK H510 J WH	L	5	$410.57	$537.37	$334.19	$126.80	$203.18	$634	$1,016	264	289	25	$40,808,774	101.07%	84.62%	$45,094,609	99.33%
13105	C/FRIG P120 J WHWH V802	E	54	$275.66	$286.67	$211.75	$11.01	$74.92	$595	$4,046	265	232	33	$40,809,369	101.07%	84.94%	$45,098,655	99.34%
13266	C/SHACK N405T J SASA V814	E	6	$654.50	$753.33	$548.81	$98.83	$204.52	$593	$1,227	266	277	11	$40,809,962	101.07%	85.26%	$45,099,882	99.35%
13142	C/LEON F310 J WHWH V802	E	3	$345.66	$541.67	$333.14	$196.01	$208.53	$588	$626	267	296	29	$40,810,550	101.07%	85.58%	$45,100,508	99.35%
13113	C/FRIG N400H J WHWH V802	E	3	$629.53	$808.33	$586.43	$178.80	$221.90	$536	$666	268	295	27	$40,811,086	101.07%	85.90%	$45,101,174	99.35%
13004	C/KELV H360S J WHWH V802	E	10	$386.97	$440.00	$332.79	$53.03	$107.21	$530	$1,072	269	287	18	$40,811,616	101.07%	86.22%	$45,102,246	99.35%
13248	C/LEON N375T J ALAL V814	E	50	$581.05	$591.66	$524.55	$10.61	$67.11	$530	$3,356	270	236	34	$40,812,146	101.07%	86.54%	$45,105,602	99.36%
12503	C/KELV H510SL J WHWH V802	E	8	$493.62	$555.00	$395.96	$61.38	$159.04	$491	$1,272	271	276	5	$40,812,637	101.08%	86.86%	$45,106,874	99.36%
13195	C/LEON C370 J WHWH V802	E	3	$372.47	$533.33	$356.55	$160.86	$176.78	$483	$530	272	299	27	$40,813,120	101.08%	87.18%	$45,107,404	99.36%
12545	C/KELV H701SL J WHWH V803	E	5	$594.33	$690.00	$458.21	$95.67	$231.79	$478	$1,159	273	283	10	$40,813,598	101.08%	87.50%	$45,108,563	99.37%
13242	C/FRIG N400H J ALAL V814	E	12	$702.06	$741.67	$607.12	$39.61	$134.55	$475	$1,615	274	270	4	$40,814,073	101.08%	87.82%	$45,110,178	99.37%
13245	C/FRIG N400H J SASA V814	E	18	$715.46	$741.67	$604.24	$26.21	$137.43	$472	$2,474	275	251	24	$40,814,545	101.08%	88.14%	$45,112,652	99.37%
12997	C/FRIG H220S J WHWH V802	E	13	$326.59	$358.33	$280.12	$31.74	$78.21	$413	$1,017	276	288	12	$40,814,958	101.08%	88.46%	$45,113,669	99.38%
13190	C/KELV F310 J WHWH V803	E	3	$410.39	$541.67	$399.27	$131.28	$142.40	$394	$427	277	301	24	$40,815,352	101.08%	88.78%	$45,114,096	99.38%
12534	C/KELV H360SL J WHWH V803	E	6	$398.43	$456.67	$339.77	$58.24	$116.90	$349	$701	278	294	16	$40,815,701	101.08%	89.10%	$45,114,797	99.38%
13007	C/SHACK H160S J WHWH V802	E	24	$319.33	$331.67	$260.36	$12.34	$71.31	$296	$1,711	279	269	10	$40,815,997	101.08%	89.42%	$45,116,508	99.38%
13265	C/SHACK N375T J SASA V814	E	3	$605.51	$700.00	$583.97	$94.49	$116.03	$283	$348	280	305	25	$40,816,280	101.08%	89.74%	$45,116,856	99.38%
13233	C/KELV N400H J ALAL V814	E	45	$657.41	$663.33	$607.41	$5.92	$55.92	$266	$2,516	281	250	31	$40,816,546	101.08%	90.06%	$45,119,372	99.39%
12998	C/FRIG H360S J WHWH V802	E	5	$389.29	$440.00	$329.91	$50.71	$110.09	$254	$550	282	297	15	$40,816,800	101.09%	90.38%	$45,119,922	99.39%

Appendix No. 3

CUMULATIVE PROFITS BASED ON EACH COSTING MODEL
PRODUCTS RANKED IN CUMULATIVE ABC MARGIN ORDER

PART No.	DESCRIPTION	EXP OR LOC	FCAST USAGE	TOTAL ABC COST	SELLING PRICE	STD F&P COST	MARGIN ABC	MARGIN F&P	TOTAL ABC MARGIN	TOTAL F&P MARGIN	ABC RANK	F&P RANK	VAR RANK	CUMULATIVE ABC MARGIN	PERCENT CUM ABC MAR	PERCENT PRODUCTS	CUMULATIVE F&P MARGIN	PERCENT CUM F&P MAR
13257	C/KELV F310 J ALAL V802	E	5	$496.23	$541.67	$395.57	$45.44	$146.10	$227	$731	283	293	10	$40,817,027	101.09%	90.71%	$45,120,653	99.39%
13262	C/SHACK N375T J ALAL V814	E	2	$587.27	$700.00	$526.02	$112.73	$173.98	$225	$348	284	304	20	$40,817,252	101.09%	91.03%	$45,121,001	99.39%
13232	C/KELV N405T J ALAL V814	E	2	$572.21	$663.33	$540.71	$91.12	$122.62	$182	$245	285	307	22	$40,817,434	101.09%	91.35%	$45,121,246	99.39%
13003	C/KELV H220S J WHWH V802	E	5	$322.96	$358.33	$280.24	$35.37	$78.09	$177	$390	286	302	16	$40,817,611	101.09%	91.67%	$45,121,636	99.39%
13229	C/KELV N405T J WHWH V814	E	3	$539.48	$580.00	$534.05	$40.52	$45.95	$122	$138	287	309	22	$40,817,733	101.09%	91.99%	$45,121,774	99.39%
12533	C/KELV H510SL J WHWH V803	E	3	$521.04	$555.00	$404.21	$33.96	$150.79	$102	$452	288	300	12	$40,817,835	101.09%	92.31%	$45,122,226	99.40%
13002	C/KELV H160S J WHWH V802	E	5	$319.07	$331.67	$260.36	$12.60	$71.31	$63	$357	289	303	14	$40,817,898	101.09%	92.63%	$45,122,583	99.40%
12552	C/KELV H160EL J WHWH V802	E	2	$351.13	$366.67	$300.47	$15.54	$66.20	$31	$132	290	310	20	$40,817,929	101.09%	92.95%	$45,122,715	99.40%
12996	C/FRIG H160S J WHWH V802	E	3	$321.22	$331.67	$258.86	$10.45	$72.81	$31	$218	291	308	17	$40,817,960	101.09%	93.27%	$45,122,933	99.40%
13235	C/KELV N405T J SASA V814	E	2	$638.79	$580.00	$539.19	($58.79)	$40.81	($118)	$82	292	312	20	$40,817,842	101.09%	93.59%	$45,123,015	99.40%
13236	C/KELV N400H J SASA V814	E	17	$670.81	$663.33	$604.53	($7.48)	$58.80	($127)	$1,000	293	290	3	$40,817,715	101.09%	93.91%	$45,124,015	99.40%
13234	C/KELV N375T J SASA V814	E	15	$598.23	$533.33	$524.64	($64.90)	$8.69	($973)	$130	294	311	17	$40,816,742	101.09%	94.23%	$45,124,145	99.40%
13231	C/KELV N375T J ALAL V814	E	35	$579.97	$533.33	$526.16	($46.64)	$7.17	($1,632)	$251	295	306	11	$40,815,110	101.08%	94.55%	$45,124,396	99.40%
13019	C/SHACK H160E J WHWH	L	320	$348.61	$342.10	$299.02	($6.51)	$43.08	($2,083)	$13,786	296	196	100	$40,813,027	101.08%	94.87%	$45,138,182	99.43%
13145	C/KELV F310 J WHWH V810	E	35	$623.79	$475.00	$412.76	($148.79)	$62.24	($5,208)	$2,178	297	258	39	$40,807,819	101.06%	95.19%	$45,140,360	99.44%
13226	C/SHACK F230 H WWWW V803	E	16	$898.86	$458.33	$342.60	($440.53)	$115.73	($7,048)	$1,852	298	264	34	$40,800,771	101.05%	95.51%	$45,142,212	99.44%
13167	C/SHACK F230 H WWWW V802	E	29	$895.24	$458.33	$343.24	($436.91)	$115.09	($12,670)	$3,338	299	237	62	$40,788,101	101.01%	95.83%	$45,145,550	99.45%
13184	C/SHACK C190 H WWWW V802	E	47	$682.87	$375.00	$268.94	($307.87)	$106.06	($14,470)	$4,985	300	225	75	$40,773,631	100.98%	96.15%	$45,150,535	99.46%
13161	C/SHACK C270 H WWWW V802	E	29	$984.38	$446.67	$306.01	($537.71)	$140.66	($15,594)	$4,079	301	231	70	$40,758,037	100.94%	96.47%	$45,154,614	99.47%
15814	C/F&P H160E J WHWH V812	E	1637	$346.44	$336.71	$296.65	($9.73)	$40.06	($15,928)	$65,578	302	145	157	$40,742,109	100.90%	96.79%	$45,220,192	99.61%
15857	C/F&P P190 J WHWH V812	E	112	$568.53	$408.24	$254.11	($160.29)	$154.13	($17,952)	$17,263	303	185	118	$40,724,157	100.86%	97.12%	$45,237,455	99.65%
12515	C/SHARP H160EL J WHWH V810	E	576	$359.89	$325.00	$301.92	($34.89)	$23.08	($20,097)	$13,294	304	197	107	$40,704,060	100.81%	97.44%	$45,250,749	99.68%
13143	C/FRIG P190 J WHWH V802	E	9	$2,713.77	$375.00	$253.22	($2,338.77)	$121.78	($21,049)	$1,096	305	286	19	$40,683,011	100.75%	97.76%	$45,251,845	99.68%
13150	C/SHACK P190 J WHWH V802	E	41	$984.63	$375.00	$262.72	($609.63)	$112.28	($24,995)	$4,603	306	229	77	$40,658,016	100.69%	98.08%	$45,256,448	99.69%
13101	C/KELV P190 J WHWH V802	E	134	$566.30	$375.00	$253.52	($191.30)	$121.48	($25,634)	$16,278	307	189	118	$40,632,382	100.63%	98.40%	$45,272,726	99.73%
13159	C/SHACK C170T H WWWW V802	E	124	$665.53	$425.00	$309.79	($240.53)	$115.21	($29,826)	$14,286	308	193	115	$40,602,556	100.55%	98.72%	$45,287,012	99.76%
15823	C/F&P H160S J WHWH V812	E	2126	$319.82	$299.21	$261.05	($20.61)	$38.16	($43,817)	$81,128	309	132	177	$40,558,739	100.45%	99.04%	$45,368,140	99.94%
13160	C/SHACK C250T H WWWW V802	E	108	$909.94	$483.33	$347.54	($426.61)	$135.79	($46,074)	$14,665	310	191	119	$40,512,665	100.33%	99.36%	$45,382,805	99.97%
13056	C/FRIG C240B H WWWW V813	E	144	$742.83	$416.62	$358.38	($326.21)	$58.24	($46,974)	$8,387	311	211	100	$40,465,691	100.22%	99.68%	$45,391,192	99.99%
13158	C/SHACK P120 H WWWW V802	E	84	$1,324.22	$286.67	$222.75	($1,037.55)	$63.92	($87,154)	$5,369	312	223	89	$40,378,537	100.00%	100.00%	$45,396,561	100.00%
			195199						$40,378,537	$45,396,561								

Total profits under ABC	$40,817,960
Loss-making Products	($439,423)
Net Profits	$40,378,537
Extra Overheads in ABC	$5,018,024
Profits Based on F&P System	$45,396,561

Absolute Average Difference in Ranks = 16.97

Appendix No. 4

MINITAB DATA FOR PEARSON'S CORRELATION COEFFICIENTS

File data1 has the full data set of 312 products. File data3 has the reduced data set with the 11 worst performing products removed.

```
MTB > retrieve 'data1'
 WORKSHEET SAVED 11/19/1990

Worksheet retrieved from file: data1.MTW

MTB > correlate 'tot_abc' 'tot_f&p'

Correlation of TOT_ABC and TOT_F&P = 0.378

MTB > correlate 'ABC' 'net_f&p'

Correlation of ABC and NET_F&P = -0.049

MTB > retrieve 'data3'
 WORKSHEET SAVED 11/20/1990

Worksheet retrieved from file: data3.MTW

MTB > correlate 'tot_abc' 'tot_f&p'

Correlation of TOT_ABC and TOT_F&P = 0.943

MTB > correlate 'ABC' 'net_f&p'

Correlation of ABC and NET_F&P = 0.471
```

Appendix No. 5

REGRESSION DATA RELATING TO THE TOP 300 PRODUCTS

MTB > correlate 'tot_abc' 'tot_f&p'

Correlation of TOT_ABC and TOT_F&P = 0.943

MTB > correlate 'ABC' 'net_f&p'

Correlation of ABC and NET_F&P = 0.471

MTB > regress 'tot_abc' 1 'tot_f&p';
SUBC > dw.

The regression equation is
TOT_ABC = 43.0 + 0.996 TOT_F&P

Predictor	Coef	Stdev	t-ratio	p
Constant	43.023	8.708	4.94	0.000
TOT_F&P	0.99605	0.02043	48.75	0.000

s = 35.72 R-sq = 88.9% R-sq(adj) = 88.8%

Analysis of Variance

SOURCE	DF	SS	MS	F	p
Regression	1	3031689	3031689	2376.50	0.000
Error	298	380158	1276		
Total	299	3411846			

Unusual Observations

Obs.	TOT_F&P	TOT_ABC	Fit	Stdev.Fit	Residual	St.Resid
9	492	605.99	533.54	2.61	72.45	2.03 R
16	451	572.73	491.89	2.19	80.84	2.27 R
17	440	554.22	480.85	2.13	73.37	2.06 R
24	455	590.03	496.61	2.23	93.42	2.62 R
25	398	515.33	439.46	2.09	75.87	2.13 R
26	404	521.04	445.63	2.07	75.41	2.11 R
31	431	544.06	472.20	2.09	71.86	2.02 R
34	492	616.50	533.23	2.61	83.27	2.34 R
35	458	594.33	499.42	2.25	94.91	2.66 R
123	492	605.49	532.86	2.60	72.63	2.04 R
128	491	608.47	532.14	2.59	76.33	2.14 R
171	413	623.79	454.15	2.06	169.64	4.76 R
256	489	601.91	530.19	2.57	71.72	2.01 R
297	181	205.68	223.28	5.19	-17.60	-0.50 X

R denotes an obs. with a large st. resid.
X denotes an obs. whose X value gives it large influence.

Durbin-Watson statistic = 1.09

MTB > regress 'ABC' 1 'net_f&p';
SUBC > dw.

The regression equation is
ABC = 66.7 + 0.760 NET_F&P

Predictor	Coef	Stdev	t-ratio	p
Constant	66.721	8.931	7.47	0.000
NET_F&P	0.76004	0.08237	9.23	0.000

s = 35.22 R-sq = 22.2% R-sq(adj) = 22.0%

Analysis of Variance

SOURCE	DF	SS	MS	F	p
Regression	1	105617	105617	85.14	0.000
Error	298	369677	1241		
Total	299	475295			

Unusual Observations

Obs.	NET_F&P	ABC	Fit	Stdev.Fit	Residual	St.Resid
9	100	213.20	142.47	2.09	70.73	2.01 R
16	88	209.87	133.44	2.51	76.43	2.18 R
24	92	226.43	136.49	2.33	89.94	2.56 R
25	90	206.97	134.86	2.42	72.11	2.05 R
26	90	206.48	134.86	2.42	71.62	2.04 R
34	100	223.93	142.41	2.09	81.52	2.32 R
35	92	228.00	136.55	2.33	91.45	2.60 R
123	98	212.08	141.49	2.12	70.59	2.01 R
128	98	215.69	141.42	2.12	74.27	2.11 R
171	87	297.77	132.65	2.56	165.12	4.70 R
230	160	271.30	188.39	4.93	82.91	2.38 R
244	191	212.11	211.56	7.29	0.55	0.02 X
245	136	242.14	170.43	3.26	71.71	2.04 R

Appendix No. 5

```
R denotes an obs. with a large st. resid.
X denotes an obs. whose X value gives it large influence.
Durbin-Watson statistic = 1.12
```

REGRESSION DATA RELATING TO ALL PRODUCTS

```
MTB > correlate 'tot_abc' 'tot_f&p'

Correlation of TOT_ABC and TOT_F&P = 0.378

MTB > correlate 'ABC' 'net_f&p'

Correlation of ABC and NET_F&P = -0.049

MTB > regress 'tot_abc' 1 'tot_f&p';
SUBC > dw.

The regression equation is
TOT_ABC = 198 + 0.680 TOT_F&P

Predictor        Coef       Stdev    t-ratio        p
Constant       197.88       39.88       4.96    0.000
TOT_F&P       0.67975     0.09452       7.19    0.000
s = 170.3      R-sq = 14.3%     R-sq(adj) = 14.0%
Analysis of Variance
SOURCE        DF          SS          MS        F        p
Regression     1     1500341     1500341    51.72    0.000
Error        310     8992035       29007
Total        311    10492376

Unusual Observations
Obs. TOT_F&P    TOT_ABC       Fit Stdev.Fit  Residual   St.Resid
172      253    2713.77    370.01     17.63   2343.76    13.84 R
179      263     984.63    376.46     16.89    608.17     3.59 R
186      223    1324.22    349.29     20.11    974.93     5.76 R
188      348     909.94    434.12     11.28    475.82     2.80 R
189      306     984.38    405.89     13.73    578.49     3.41 R
195      343     895.24    431.20     11.49    464.04     2.73 R
229      343     898.86    430.76     11.53    468.10     2.75 R
309      181     205.68    320.89     23.65   -115.21    -0.68 X

R denotes an obs. with a large st. resid.
X denotes an obs. whose X value gives it large influence.

Durbin-Watson statistic = 1.90

MTB > regress 'ABC' 1 'net_f&p';
SUBC > dw.

The regression equation is
ABC = 207 - 0.338 NET_F&P

Predictor        Coef       Stdev    t-ratio        p
Constant       206.83       41.82       4.95    0.000
NET_F&P       -0.3381      0.3887      -0.87    0.385

s = 170.2      R-sq = 0.2%      R-sq(adj) = 0.0%

Analysis of Variance
SOURCE        DF          SS          MS        F        p
Regression     1       21921       21921     0.76    0.385
Error        310     8981728       28973
Total        311     9003649

Unusual Observations
Obs. NET_F&P        ABC       Fit Stdev.Fit  Residual   St.Resid
172       71    2531.44    182.87     16.29   2348.57    13.86 R
179       74     795.48    181.96     15.46    613.52     3.62 R
186       62    1163.96    185.71     19.02    978.25     5.78 R
188       98     660.87    173.54      9.93    487.33     2.87 R
189       74     752.39    181.81     15.33    570.58     3.37 R
195       98     649.97    173.71      9.98    476.26     2.80 R
229       96     651.82    174.52     10.27    477.30     2.81 R
240      160     255.17    152.66     23.65    102.51     0.61 X
255      191     212.11    142.40     34.75     69.71     0.42 X

R denotes an obs. with a large st. resid.
X denotes an obs. whose X value gives it large influence.
Durbin-Watson statistic = 1.90
```

Appendix No. 6

REGRESSION TO DETERMINE FACTORS INFLUENCING PROFIT MARGINS

```
MTB > stepwise 'abc_marg' 4 'e/l' 'usage' 'material' 'price'

STEPWISE REGRESSION OF ABC_MARG ON  4 PREDICTORS, WITH N =  312

    STEP        1        2        3
CONSTANT   -298.0   -172.8   -216.0

PRICE       0.712    0.619    0.633
T-RATIO     13.15    11.18    11.55

E/L                   -106      -86
T-RATIO              -5.00    -3.95

USAGE                         0.036
T-RATIO                        3.14

S             176      170      167
R-SQ        35.79    40.61    42.45

MTB > regress 'abc_marg' 3 'price' 'e/l' 'usage';
SUBC > dw.

The regression equation is
ABC_MARG = - 216 + 0.633 PRICE - 86.3 E/L + 0.0356 USAGE

Predictor       Coef        Stdev    t-ratio       p
Constant     -216.01        43.64      -4.95   0.000
PRICE        0.63290      0.05479      11.55   0.000
E/L           -86.26        21.85      -3.95   0.000
USAGE        0.03559      0.01132       3.14   0.002

s = 167.3       R-sq = 42.5%     R-sq(adj) = 41.9%

Analysis of Variance

SOURCE       DF          SS         MS        F       p
Regression    3     6359402    2119801    75.74   0.000
Error       308     8620468      27989
Total       311    14979870

SOURCE       DF      SEQ SS
PRICE         1     5361999
E/L           1      720676
USAGE         1      276728

Unusual Observations
Obs.  PRICE  ABC_MARG       Fit  Stdev.Fit  Residual    St.Resid
 12     378     14.56     88.94      45.34    -74.38     -0.46 X
 13     384     50.32     64.94      37.23    -14.62     -0.09 X
 75     815    361.62    476.99      49.15   -115.37     -0.72 X
 77     974    449.13    522.60      36.46    -73.47     -0.45 X
 81     485    172.24    227.13      37.33    -54.89     -0.34 X
 84     574    207.54    292.14      38.85    -84.60     -0.52 X
172     375  -2338.77    -64.62      17.04  -2274.15    -13.66 R
179     375   -609.63    -63.48      16.93   -546.15     -3.28 R
186     287  -1037.55   -117.85      20.32   -919.70     -5.54 R
188     483   -426.61      7.47      13.49   -434.08     -2.60 R
189     447   -537.71    -18.55      14.67   -519.16     -3.12 R
195     458   -436.91    -11.17      14.37   -425.74     -2.55 R
229     458   -440.53    -11.63      14.42   -428.90     -2.57 R
292     768    317.00    310.37      39.37      6.63      0.04 X
293     866    349.50    406.55      51.36    -57.05     -0.36 X

R denotes an obs. with a large st. resid.
X denotes an obs. whose X value gives it large influence.

Durbin-Watson statistic = 1.97
```

Appendix No. 6

300 PRODUCT ANALYSIS.

```
MTB > stepwise 'abc_marg' 4 'e/l' 'usage' 'material' 'price'

 STEPWISE REGRESSION OF ABC_MARG ON  4 PREDICTORS, WITH N =  300

   STEP        1        2        3
CONSTANT  -171.29   -59.68   -73.87

PRICE       0.548    1.077    1.048
T-RATIO     25.50    55.82    55.43

MATERIAL            -1.439   -1.361
T-RATIO             -32.25   -30.69

USAGE                        0.0122
T-RATIO                        5.88

S            67.8     32.0     30.3
R-SQ        68.57    93.02    93.75

MTB > regress 'abc_marg' 3 'price' 'material' 'usage';
SUBC > dw.

The regression equation is
ABC_MARG = - 73.9 + 1.05 PRICE - 1.36 MATERIAL + 0.0122 USAGE
Predictor       Coef       Stdev    t-ratio        p
Constant     -73.869       7.489      -9.86    0.000
PRICE        1.04841     0.01891      55.43    0.000
MATERIAL    -1.36115     0.04435     -30.69    0.000
USAGE       0.012202    0.002076       5.88    0.000

s = 30.34       R-sq = 93.7%     R-sq(adj) = 93.7%

Analysis of Variance

SOURCE        DF          SS          MS         F        p
Regression     3     4087084     1362361   1479.54    0.000
Error        296      272558         921
Total        299     4359642

SOURCE        DF      SEQ SS
PRICE          1     2989377
MATERIAL       1     1065905
USAGE          1       31803

Unusual Observations
Obs.    PRICE  ABC_MARG       Fit  Stdev.Fit   Residual    St.Resid
 12      378     14.56      55.30      8.32     -40.74     -1.40 X
 13      384     50.32      86.18      6.48     -35.86     -1.21 X
 44     1077    396.00     477.97      5.47     -81.97     -2.75 R
 75      815    361.62     366.22      9.08      -4.60     -0.16 X
 77      974    449.13     434.14      6.72      14.99      0.51 X
 81      485    172.24     192.09      6.69     -19.85     -0.67 X
 84      574    207.54     238.73      7.04     -31.19     -1.06 X
171      475   -148.79     -19.21      3.88    -129.58     -4.31 R
202      542    131.28      68.65      2.61      62.63      2.07 R
220      533     17.30     -46.71      5.36      64.01      2.14 R
230      742     26.21      99.36      4.48     -73.15     -2.44 R
281      768    317.00     305.14      6.27      11.86      0.40 X
282      866    349.50     348.79      8.55       0.71      0.02 X
R denotes an obs. with a large st. resid.
X denotes an obs. whose X value gives it large influence.

Durbin-Watson statistic = 1.31
```

Appendix No. 7

POST-ABC QUESTIONNAIRE

INTERVIEWEE'S NAME: ____________________ **DATE:** ______

1. Attached in Annex 1 is a copy of the activities, costs and cost drivers for each department.

    a. Is information on cost drivers and activities currently available to you? Give a grade between 1 and 7 where 1 = Always available, 7 = Never available

    [1 2 3 4 5 6 7] [ ]

    b. If the information is available or could be available can/could you use this information and if so what do/would you use the information for? This information is normally physical information rather than financial information. For example would you use it for controlling processes.

    Comments:

    ____
    ____
    ____
    ____
    ____
    ____
    ____
    ____
    ____

2. Are accurate product costs important? If so why, if not why not? What do terms like "profitability", "good product" mean to you? How would you determine these factors?

    Comments:

    ____
    ____
    ____
    ____
    ____
    ____
    ____
    ____
    ____

Appendix No. 7

3. ABC includes more costs such as administration, purchasing and systems costs into products making them appear to be more expensive. This will affect their apparent profitability. Should these costs be included? Are variable costs Eg materials, the only ones which are important?

Comments:

4. Attached in Annex 2 are five groups of products. Please rank these products giving them a score between 1 and 312 (please do not give two or more products the same score).

5. Attached in Annex 3 is a ranking of products based on ABC. Please evaluate it in terms of your own knowledge and beliefs regarding the profitability of these products. In general, how well does it seem to fit your opinions on product profitability? Give a grade between 1 and 7 where 1 means the ranking **exactly fits** your opinion and 7 means it **does not fit** at all.

[1 2 3 4 5 6 7] [ ]

Comments:

Page 1

COST POOL AND COST DRIVER DESIGNATION

DEPARTMENT NAME: **SYSTEMS**

DEPARTMENT COST $317,804
STAFFING
MANAGER 1
STAFF 9
10

TASK No.	DETAILS	PERCENT	COST	DRIVER
1	Work for Departments	30.1075%	$95,683	Staff Allocated
2	Work on Products	69.8925%	$222,120	Forecast Production
		100.0000%	$317,803	

DEPARTMENT NAME **ADMINISTRATION**

DEPARTMENT COST $2,945,939
STAFFING
MANAGER 1.0
STAFF 12.5
13.5

TASK No.	DETAILS	STAFF	COST	DRIVER
1	Accounts Payable/Data Input	3.00	$654,653	Commodity Purchases
2	Asset Register	0.67	$146,206	Plant Value
3	Costing Export	2.16	$471,350	Forecast Export Production
4	Costing Local	0.24	$52,372	Forecast Local Production
5	Secretarial Services/Budgets	6.63	$1,446,783	Dept Operating Costs
6	Projects	0.80	$174,575	Capitalise
		13.50	$2,945,939	

DEPARTMENT NAME: **CLEANERS GARDENERS SECURITY**

DEPARTMENT COST
Cleaners & Gardeners $424,690
Security $146,826
TOTAL COST $571,516

STAFFING
MANAGER 1
STAFF 11
12

TASK No.	DETAILS	STAFF	COST	DRIVER
1	Cleaners	8	$381,011	Dept Complexity
2	Gardeners/security	4	$190,505	Manager's Judgement
		12.00	$571,516	

Page 2

DEPARTMENT NAME: **CAFETERIA**

DEPARTMENT COST $323,884
STAFFING
MANAGER 1
STAFF 6
7

TASK No.	DETAILS	STAFF	COST	DRIVER
1	Cafeteria Workers	7	$323,884	Staff per Department

DEPARTMENT NAME **PURCHASING**

DEPARTMENT COST $253,708
STAFFING
MANAGER 1
STAFF 6
7

TASK No.	DETAILS	STAFF	COST	DRIVER
1	Specialist Engineering Reqts	1.20	$43,493	MER's
2	Indirect material purchasing	1.12	$40,593	Manager's Judgement
3	Compressors/Electrical/Local	3.33	$120,693	Commodity Purchases
4	Shipping	1.35	$48,929	Receipts into Store
		7.00	$253,708	

DEPARTMENT NAME **PERSONNEL TRAINING**

DEPARTMENT COST
Personnel $328,568
Training $81,709
$410,277

STAFFING
MANAGER 2
STAFF 9
11

TASK No.	DETAILS	STAFF	COST	DRIVER
1	Payroll/Staff Support/Ind. Reln	8.80	$328,222	No. Staff per Dept.
2	Hiring	2.20	$82,055	Staff T/O per Dept.
		11.00	$410,277	

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DEPARTMENT NAME QUALITY ASSURANCE

DEPARTMENT COST $661,318

STAFFING	
MANAGER	1
STAFF	17
	18

TASK No.	DETAILS	STAFF	COST	DRIVER
1	Process Assist/Data /Sec/W	13.93	$511,787	Dept. Complexity
2	Vendor Customer Feedback	2.90	$106,546	Dept. Complexity
3	R & D	1.17	$42,985	Capitalise
		18.00	$661,318	

DEPARTMENT NAME MATERIALS AND STORES

DEPARTMENT COST $1,320,988

STAFFING	
MANAGER	2
STAFF	26
	28

TASK No.	DETAILS	STAFF	COST	DRIVER
1	Inwards Goods/Storage/Data	8.00	$377,425	Receipts into Store
2	Despatch to Production	9.20	$434,039	Issues to production
3	Stockcheck	1.40	$66,049	No items in store
4	Despatch for Rework	0.60	$28,307	Requests for rework
5	Despatch of Spares(Cust Svs)	2.10	$99,074	Number of Stock lines
6	Despatch for Distribution	1.60	$75,485	Forecast Production
7	Factory Support	5.10	$240,609	Forecast Production
		28.00	$1,320,988	

DEPARTMENT NAME ENGINEERING

DEPARTMENT COST $2,139,783

STAFFING	
MANAGER	2
STAFF	48
	50

TASK No.	DETAILS	STAFF	COST	DRIVER
1	Compact	2.95	$126,247	Local Production Compact
2	Award	4.60	$196,860	Local Production Award
3	Chest Freezer	1.70	$72,753	Local Production C/Freezer
4	Export Compact	1.45	$62,054	Export Production Compact
5	Export Award	2.80	$119,828	Export Production Award
6	Export Chest Freezer	1.15	$49,215	Export Production C/Freezer
7	Plant Support/General/CAD	11.61	$496,858	Dept. Complexity
8	Plant improvements	9.40	$402,279	Plant Complexity
9	R & D Team	10.80	$462,193	R&D - Capitalize
10	CAD Training Dev.	2.64	$112,981	R&D - Capitalize
11	Australian Factory	0.90	$38,515	R&D - Capitalize
		50.00	$2,139,783	
	Non-Capital Total		$1,526,094	

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DEPARTMENT NAME MAINTENANCE

DEPARTMENT COST $2,485,639
STAFFING 59

TASK No.	DETAILS	STAFF	COST	DRIVER
1	Preventative maint/Sched. Short Term planning & Scheduling Training Laison	35.50	$1,495,596	Plant Complexity
2	Breakdowns	10.00	$421,295	Maintenance Labour Charge
3	Building Mods	2.00	$84,259	MERS
4	Capital Works	11.50	$484,489	Capitalize
		59.00	$2,485,639	
	Non-Capital Work		$2,001,150	

DEPARTMENT NAME HOME FREEZER MANUFACTURE

DEPARTMENT COST $1,321,707
COST DRIVER HF Production Volume weighted by Component Count

DEPARTMENT NAME HOME FREEZER ASSEMBLY

DEPARTMENT COST $1,487,891
COST DRIVER HF Production Volume weighted by Component Count

DEPARTMENT NAME REFRIGERATOR MANUFACTURE

DEPARTMENT COST $2,993,008
COST DRIVER RF Production Volume weighted by Component Count

DEPARTMENT NAME REFRIGERATOR ASSEMBLY

DEPARTMENT COST $4,388,711
COST DRIVER RF Production Volume weighted by Component Count

DEPARTMENT NAME PLASTICS

DEPARTMENT COST $3,951,578
COST DRIVER Plastics Component Production Volume

DEPARTMENT NAME NUMBER TWO PLANT

DEPARTMENT COST $1,803,448
COST DRIVER No Two Plant Component Production Volume

TOTAL COST OF DEPARTMENTS $27,377,199
Check figure from budget $27,377,199

Appendix No. 7

Annex 2

GROUP NO. 1

PART NUMBER	DESCRIPTION					EXP OR LOC	RANKING
12515	C/SHARP	H160EL	J	WHWH	V810	E	[ ]
12527	C/SHARP	H360EL	J	WHWH	V810	E	[ ]
12996	C/FRIG	H160S	J	WHWH	V802	E	[ ]
13019	C/SHACK	H160E	J	WHWH		L	[ ]
13056	C/FRIG	C240B	H	WWWW	V813	E	[ ]
13101	C/KELV	P190	J	WHWH	V802	E	[ ]
13143	C/FRIG	P190	J	WHWH	V802	E	[ ]
13145	C/KELV	F310	J	WHWH	V810	E	[ ]
13150	C/SHACK	P190	J	WHWH	V802	E	[ ]
13158	C/SHACK	P120	H	WWWW	V802	E	[ ]
13159	C/SHACK	C170T	H	WWWW	V802	E	[ ]
13160	C/SHACK	C250T	H	WWWW	V802	E	[ ]
13161	C/SHACK	C270	H	WWWW	V802	E	[ ]
13167	C/SHACK	F230	H	WWWW	V802	E	[ ]
13184	C/SHACK	C190	H	WWWW	V802	E	[ ]
13226	C/SHACK	F230	H	WWWW	V803	E	[ ]
13231	C/KELV	N375T	J	ALAL	V814	E	[ ]
13233	C/KELV	N400H	J	ALAL	V814	E	[ ]
13234	C/KELV	N375T	J	SASA	V814	E	[ ]
13235	C/KELV	N405T	J	SASA	V814	E	[ ]
13236	C/KELV	N400H	J	SASA	V814	E	[ ]
13248	C/LEON	N375T	J	ALAL	V814	E	[ ]
15814	C/F&P	H160E	J	WHWH	V812	E	[ ]
15823	C/F&P	H160S	J	WHWH	V812	E	[ ]
15857	C/F&P	P190	J	WHWH	V812	E	[ ]

GROUP NO. 2

PART NUMBER	DESCRIPTION				EXP OR LOC	RANKING
12865	C/FRIG	N400H	J	SASA	L	[ ]
12866	C/FRIG	C410B	J	WHWH	L	[ ]
12867	C/FRIG	N395B	J	SASA	L	[ ]
12870	C/KELV	C365H	J	WHWH	L	[ ]
12873	C/KELV	C390T	J	WHWH	L	[ ]
12879	C/KELV	N400H	J	SASA	L	[ ]
12880	C/KELV	C410B	J	WHWH	L	[ ]
12881	C/KELV	N395B	J	SASA	L	[ ]
12884	C/FRIG	N375T	J	WHWH	L	[ ]
12894	C/FRIG	N400H	J	WHWH	L	[ ]
12953	C/FRIG	N395B	J	WHWH	L	[ ]
12957	C/KELV	N375T	J	WHWH	L	[ ]
12958	C/KELV	C380B	J	WHWH	L	[ ]
12960	C/KELV	N400H	J	WHWH	L	[ ]
12961	C/KELV	N395B	J	WHWH	L	[ ]
13041	C/F&P	C365H	H	WWWW	L	[ ]
13047	C/F&P	C410B	H	WWWW	L	[ ]
13067	C/KELV	N369B	J	WHWH	L	[ ]
13070	C/FRIG	N369B	J	WHWH	L	[ ]
13205	C/F&P	N369B	H	WWWW	L	[ ]
15354	C/F&P	N400H	H	WWWW	L	[ ]
15355	C/F&P	N395B	H	WWWW	L	[ ]
15834	C/FRIG	C410B	J	SASA	L	[ ]
15840	C/KELV	C410B	J	SASA	L	[ ]
15875	C/KELV	N369B	J	SASA	L	[ ]

Appendix No. 7

Annex 2

GROUP NO. 3

PART NUMBER	DESCRIPTION					EXP OR LOC	RANKING
12500	C/KELV	H160SL	J	WHWH	V802	E	[ ]
12515	C/SHARP	H160EL	J	WHWH	V810	E	[ ]
12516	C/SHARP	H220EL	J	WHWH	V810	E	[ ]
12552	C/KELV	H160EL	J	WHWH	V802	E	[ ]
12996	C/FRIG	H160S	J	WHWH	V802	E	[ ]
13002	C/KELV	H160S	J	WHWH	V802	E	[ ]
13007	C/SHACK	H160S	J	WHWH	V802	E	[ ]
13019	C/SHACK	H160E	J	WHWH		L	[ ]
13056	C/FRIG	C240B	H	WWWW	V813	E	[ ]
13100	C/KELV	P120	J	WHWH	V802	E	[ ]
13105	C/FRIG	P120	J	WHWH	V802	E	[ ]
13145	C/KELV	F310	J	WHWH	V810	E	[ ]
13151	C/KELV	P120	J	WHWH	V803	E	[ ]
13158	C/SHACK	P120	H	WWWW	V802	E	[ ]
13228	C/KELV	N375T	J	WHWH	V814	E	[ ]
13229	C/KELV	N405T	J	WHWH	V814	E	[ ]
13230	C/KELV	N400H	J	WHWH	V814	E	[ ]
13231	C/KELV	N375T	J	ALAL	V814	E	[ ]
13233	C/KELV	N400H	J	ALAL	V814	E	[ ]
13234	C/KELV	N375T	J	SASA	V814	E	[ ]
13235	C/KELV	N405T	J	SASA	V814	E	[ ]
13236	C/KELV	N400H	J	SASA	V814	E	[ ]
13248	C/LEON	N375T	J	ALAL	V814	E	[ ]
15814	C/F&P	H160E	J	WHWH	V812	E	[ ]
15823	C/F&P	H160S	J	WHWH	V812	E	[ ]

GROUP NO. 4

PART NUMBER	DESCRIPTION					EXP OR LOC	RANKING
12860	C/FRIG	N375T	J	SASA		L	[ ]
12865	C/FRIG	N400H	J	SASA		L	[ ]
12866	C/FRIG	C410B	J	WHWH		L	[ ]
12867	C/FRIG	N395B	J	SASA		L	[ ]
12874	C/KELV	N375T	J	SASA		L	[ ]
12879	C/KELV	N400H	J	SASA		L	[ ]
12880	C/KELV	C410B	J	WHWH		L	[ ]
12881	C/KELV	N395B	J	SASA		L	[ ]
12894	C/FRIG	N400H	J	WHWH		L	[ ]
12953	C/FRIG	N395B	J	WHWH		L	[ ]
12960	C/KELV	N400H	J	WHWH		L	[ ]
12961	C/KELV	N395B	J	WHWH		L	[ ]
13018	C/KELV	H701E	J	WHWH		L	[ ]
13028	C/FRIG	H701E	J	WHWH		L	[ ]
13041	C/F&P	C365H	H	WWWW		L	[ ]
13047	C/F&P	C410B	H	WWWW		L	[ ]
13205	C/F&P	N369B	H	WWWW		L	[ ]
15354	C/F&P	N400H	H	WWWW		L	[ ]
15355	C/F&P	N395B	H	WWWW		L	[ ]
15818	C/F&P	H701E	J	WHWH	V812	E	[ ]
15828	C/FRIG	C365H	J	SASA		L	[ ]
15834	C/FRIG	C410B	J	SASA		L	[ ]
15836	C/KELV	C365H	J	SASA		L	[ ]
15840	C/KELV	C410B	J	SASA		L	[ ]
15875	C/KELV	N369B	J	SASA		L	[ ]

Appendix No. 7

Annex 2

GROUP NO. 5

PART NUMBER	DESCRIPTION					EXP OR LOC	RANKING
12500	C/KELV	H160SL	J	WHWH	V802	E	[ ]
12504	C/KELV	H701SL	J	WHWH	V802	E	[ ]
12506	C/KELV	H360EL	J	WHWH	V802	E	[ ]
12518	C/SHACK	H220SL	J	WHWH	V810	E	[ ]
12540	C/FRIG	H360EL	J	WHWH	V813	E	[ ]
12857	C/FRIG	C335T	J	WHWH		L	[ ]
12865	C/FRIG	N400H	J	SASA		L	[ ]
12973	C/FRIG	C170T	J	WHWH		L	[ ]
13002	C/KELV	H160S	J	WHWH	V802	E	[ ]
13009	C/SHACK	H360S	J	WHWH	V802	E	[ ]
13011	C/SHACK	H510S	J	WHWH	V802	E	[ ]
13027	C/FRIG	H510E	J	WHWH		L	[ ]
13040	C/F&P	C370	H	WWWW		L	[ ]
13068	C/FRIG	C229	J	WHWH		L	[ ]
13106	C/FRIG	C170T	J	WHWH	V802	E	[ ]
13124	C/KELV	F310	J	WHWH	V802	E	[ ]
13125	C/FRIG	F160	J	WHWH	V802	E	[ ]
13147	C/LEON	C170T	J	WHWH	V802	E	[ ]
13184	C/SHACK	C190	H	WWWW	V802	E	[ ]
13202	C/SHACK	N395B	J	ALAL	V802	E	[ ]
13205	C/F&P	N369B	H	WWWW		L	[ ]
13212	C/LEON	C365H	J	WHWH	V802	E	[ ]
13216	C/KELV	N395B	J	SASA	V802	E	[ ]
13230	C/KELV	N400H	J	WHWH	V814	E	[ ]
13242	C/FRIG	N400H	J	ALAL	V814	E	[ ]

ALL -VE MARGIN ABC PRODUCTS

PART NUMBER	DESCRIPTION	EXP OR LOC	FCAST USAGE	TOTAL ABC COST	SELLING PRICE	STD F&P COST	MARGIN ABC	MARGIN F&P	ABC RANK	F&P RANK	VAR RANK
13143	C/FRIG P190 J WHWH V802	E	9	$2,713.77	$375.00	$253.22	($2,338.77)	$121.78	312	238	74
13158	C/SHACK P120 H WWWW V802	E	84	$1,324.22	$286.67	$222.75	($1,037.55)	$63.92	311	298	13
13150	C/SHACK P190 J WHWH V802	E	41	$984.63	$375.00	$262.72	($609.63)	$112.28	310	258	52
13161	C/SHACK C270 H WWWW V802	E	29	$984.38	$446.67	$306.01	($537.71)	$140.66	309	219	90
13226	C/SHACK F230 H WWWW V803	E	16	$898.86	$458.33	$342.60	($440.53)	$115.73	308	253	55
13167	C/SHACK F230 H WWWW V802	E	29	$895.24	$458.33	$343.24	($436.91)	$115.09	307	255	52
13160	C/SHACK C250T H WWWW V802	E	108	$909.94	$483.33	$347.54	($426.61)	$135.79	306	230	76
13056	C/FRIG C240B H WWWW V813	E	144	$742.83	$416.62	$358.38	($326.21)	$58.24	305	301	4
13184	C/SHACK C190 H WWWW V802	E	47	$682.87	$375.00	$268.94	($307.87)	$106.06	304	265	39
13159	C/SHACK C170T H WWWW V802	E	124	$665.53	$425.00	$309.79	($240.53)	$115.21	303	254	49
13101	C/KELV P190 J WHWH V802	E	134	$566.30	$375.00	$253.52	($191.30)	$121.48	302	239	63
15857	C/F&P P190 J WHWH V812	E	112	$568.53	$408.24	$254.11	($160.29)	$154.13	301	190	111
13145	C/KELV F310 J WHWH V810	E	35	$623.79	$475.00	$412.76	($148.79)	$62.24	300	299	1
13234	C/KELV N375T J SASA V814	E	15	$598.23	$533.33	$524.64	($64.90)	$8.69	299	311	12
13235	C/KELV N405T J SASA V814	E	2	$638.79	$580.00	$539.19	($58.79)	$40.81	298	306	8
13231	C/KELV N375T J ALAL V814	E	35	$579.97	$533.33	$526.16	($46.64)	$7.17	297	312	15
12515	C/SHARP H160EL J WHWH V810	E	576	$359.89	$325.00	$301.92	($34.89)	$23.08	296	309	13
15823	C/F&P H160S J WHWH V812	E	2126	$319.82	$299.21	$261.05	($20.61)	$38.16	295	308	13
15814	C/F&P H160E J WHWH V812	E	1637	$346.44	$336.71	$296.65	($9.73)	$40.06	294	307	13
13236	C/KELV N400H J SASA V814	E	17	$670.81	$663.33	$604.53	($7.48)	$58.80	293	300	7
13019	C/SHACK H160E J WHWH	L	320	$348.61	$342.10	$299.02	($6.51)	$43.08	292	305	13
13233	C/KELV N400H J ALAL V814	E	45	$657.41	$663.33	$607.41	$5.92	$55.92	291	303	12
12527	C/SHARP H360EL J WHWH V810	E	659	$445.34	$453.33	$374.47	$7.99	$78.86	290	283	7
12996	C/FRIG H160S J WHWH V802	E	3	$321.22	$331.67	$258.86	$10.45	$72.81	289	292	3
13248	C/LEON N375T J ALAL V814	E	50	$581.05	$591.66	$524.55	$10.61	$67.11	288	296	8

TOP 25 POSITIVE ABC MARGIN PRODUCTS

PART NUMBER	DESCRIPTION			EXP OR LOC	FCAST USAGE	TOTAL ABC COST	SELLING PRICE	STD F&P COST	MARGIN ABC	MARGIN F&P	ABC RANK	F&P RANK	VAR RANK
12960	C/KELV	N400H	J WHWH	L	1375	$577.67	$1,053.05	$574.61	$475.38	$478.44	1	5	4
12961	C/KELV	N395B	J WHWH	L	3440	$524.48	$973.61	$541.88	$449.13	$431.73	2	13	11
15354	C/F&P	N400H	H WWWW	L	218	$636.54	$1,077.49	$566.88	$440.95	$510.61	3	1	2
12894	C/FRIG	N400H	J WHWH	L	838	$612.83	$1,053.05	$573.97	$440.22	$479.08	4	4	0
12953	C/FRIG	N395B	J WHWH	L	1817	$536.53	$973.61	$542.65	$437.08	$430.96	5	14	9
15355	C/F&P	N395B	H WWWW	L	666	$561.48	$998.05	$538.51	$436.57	$459.54	6	6	0
12879	C/KELV	N400H	J SASA	L	14	$647.02	$1,077.49	$584.82	$430.47	$492.67	7	3	4
12881	C/KELV	N395B	J SASA	L	377	$574.26	$998.05	$541.94	$423.79	$456.11	8	7	1
12880	C/KELV	C410B	J WHWH	L	1482	$459.11	$881.95	$477.66	$422.84	$404.29	9	21	12
13047	C/F&P	C410B	H WWWW	L	226	$492.36	$906.39	$473.98	$414.03	$432.41	10	12	2
12867	C/FRIG	N395B	J SASA	L	203	$584.64	$998.05	$542.04	$413.41	$456.01	11	8	3
12866	C/FRIG	C410B	J WHWH	L	913	$471.01	$881.95	$478.33	$410.94	$403.62	12	22	10
12957	C/KELV	N375T	J WHWH	L	1115	$499.43	$900.16	$507.64	$400.73	$392.52	13	27	14
15840	C/KELV	C410B	J SASA	L	17	$508.37	$906.39	$477.71	$398.02	$428.68	14	15	1
12865	C/FRIG	N400H	J SASA	L	8	$681.49	$1,077.49	$584.43	$396.00	$493.06	15	2	13
15834	C/FRIG	C410B	J SASA	L	11	$514.81	$906.39	$472.26	$391.58	$434.13	16	11	5
12884	C/FRIG	N375T	J WHWH	L	686	$512.11	$900.16	$505.32	$388.05	$394.84	17	26	9
13067	C/KELV	N369B	J WHWH	L	1689	$518.27	$906.27	$515.13	$388.00	$391.14	18	28	10
13070	C/FRIG	N369B	J WHWH	L	1123	$529.66	$906.27	$515.35	$376.61	$390.92	19	29	10
13205	C/F&P	N369B	H WWWW	L	641	$554.28	$930.71	$510.54	$376.43	$420.17	20	16	4
12870	C/KELV	C365H	J WHWH	L	690	$430.60	$802.18	$422.15	$371.58	$380.03	21	36	15
15875	C/KELV	N369B	J SASA	L	180	$564.00	$930.71	$515.19	$366.71	$415.52	22	17	5
12873	C/KELV	C390T	J WHWH	L	1030	$429.89	$796.28	$431.94	$366.39	$364.34	23	42	19
12958	C/KELV	C380B	J WHWH	L	4986	$452.99	$814.61	$467.68	$361.62	$346.93	24	51	27
13041	C/F&P	C365H	H WWWW	L	180	$466.81	$826.63	$411.64	$359.82	$414.99	25	18	7

ABC MARGINS MIDDLE 25 PRODUCTS

PART NUMBER	DESCRIPTION	EXP OR LOC	FCAST USAGE	TOTAL ABC COST	SELLING PRICE	STD F&P COST	MARGIN ABC	MARGIN F&P	ABC RANK	F&P RANK	VAR RANK
13254	C/LEON N400H J SASA V814	E	45	$672.73	$808.33	$604.17	$135.60	$204.16	168	140	28
12522	C/SHACK H701SL J WHWH V802	E	881	$554.22	$690.00	$439.57	$135.78	$250.43	167	91	76
13124	C/KELV F310 J WHWH V802	E	500	$405.23	$541.67	$395.35	$136.44	$146.32	166	208	42
15861	C/F&P C270 J WHWH V812	E	1997	$339.25	$476.28	$306.64	$137.03	$169.64	165	183	18
13267	C/SHACK N400H J SASA V814	E	6	$670.81	$808.33	$604.53	$137.52	$203.80	164	142	22
13259	C/SHACK N375T H WWWW V814	E	5	$560.67	$700.00	$520.77	$139.33	$179.23	163	167	4
13261	C/SHACK N400H H WWWW V814	E	8	$663.52	$808.33	$591.28	$144.81	$217.05	162	125	37
13218	C/KELV N400H J SASA V802	E	725	$663.33	$808.33	$597.28	$145.00	$211.05	161	131	30
12542	C/FRIG H701EL J WHWH V813	E	52	$616.50	$761.52	$492.15	$145.02	$269.37	160	78	82
13169	C/SHACK N375T H WWWW V802	E	497	$553.20	$700.00	$513.51	$146.80	$186.49	159	162	3
15869	C/SHACK F310 J WH	L	20	$300.89	$450.33	$296.63	$149.44	$153.70	158	191	33
13130	C/LEON C335T J WHWH V802	E	20	$401.99	$551.67	$406.69	$149.68	$144.98	157	210	53
13128	C/KELV C335T J WHWH V802	E	1560	$400.95	$551.67	$408.37	$150.72	$143.30	156	215	59
13200	C/SHACK C420T H WWWW V802	E	30	$497.24	$648.33	$446.49	$151.09	$201.84	155	149	6
13022	C/SHACK H510E J WHWH	L	301	$522.05	$673.88	$428.35	$151.83	$245.53	154	94	60
13201	C/SHACK N400H H WWWW V802	E	875	$656.06	$808.33	$584.02	$152.27	$224.31	153	108	45
12509	C/KELV H701EL J WHWH V802	E	5	$605.99	$758.33	$492.46	$152.34	$265.87	152	81	71
13164	C/SHACK C380B H WWWW V802	E	114	$493.75	$646.67	$469.06	$152.92	$177.61	151	171	20
13165	C/SHACK C390T H WWWW V802	E	149	$475.69	$630.00	$435.76	$154.31	$194.24	150	153	3
13121	C/KELV N400H J ALAL V802	E	869	$649.95	$808.33	$600.16	$158.38	$208.17	149	134	15
12882	C/SHACK F310 J WHWH	L	1216	$412.34	$571.86	$399.97	$159.52	$171.89	148	178	30
13195	C/LEON C370 J WHWH V802	E	3	$372.47	$533.33	$356.55	$160.86	$176.78	147	174	27
15817	C/F&P H510E J WHWH V812	E	485	$519.50	$681.27	$426.14	$161.77	$255.13	146	88	58
12973	C/FRIG C170T J WHWH	L	2324	$322.48	$484.55	$305.67	$162.07	$178.88	145	168	23
13140	C/KELV C370 J WHWH V802	E	9	$370.32	$533.33	$356.55	$163.01	$176.78	144	173	29

CHAPTER 11

CONCLUSIONS AND AREAS FOR FUTURE RESEARCH

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CHAPTER 11

CONCLUSIONS AND AREAS FOR FUTURE RESEARCH

I. Introduction

Costing systems are currently under attack by both academics and practitioners for being inappropriate for decision-making in today's industries. The traditional absorption costing model with its simple classification of costs and simplistic, often arbitrary allocations of overheads does not capture the complexity and diversity of modern firms and their production processes. To meet this challenge a new costing model, Activity-based Costing (ABC), has emerged. This thesis has examined this model both theoretically and practically to see if it has the superiority over the old costing model which its champions claim for it.

ABC is being developed mainly by Harvard Business School academics, Robin Cooper[1] and Robert S. Kaplan,[2] in addition to H. Thomas Johnson[3] who is working on the wider area of Activity Accounting. Although this development has taken place in the 1980s, work on activity accounting was begun in the 1970s by other academics, including Wells[4] and Staubus.[5] However, it is only since the 1980s that firms have been attempting to use the model in practice, which has enabled empirical research into its theoretical structure.[6]

In the ABC model, costs are traced from resources purchased by the firm for production, to cost pools, which relate to each of the activities the firm considers necessary in order to produce, store, market and transport its products to its customers. Each of these cost pools is traced to the products which consume

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1. Cooper 1987a, 1987b, 1988a, 1988b, 1989a, 1989b.
2. Kaplan 1988a, 1988b, 1990.
3. Johnson 1988, 1990a, 1990b.
4. Wells 1976.
5. Staubus 1988.
6. See Borden 1990 for a review of the literature on the ABC model.

them using a transaction which relates to the activity generating the pool. These transactions are called cost drivers. This is different from the traditional absorption costing model which allocates costs to products using a single, generally production volume derived allocation base such as direct labour hours.

The thesis has used an experimental implementation of the ABC model in an automated factory at the Refrigeration Division of Fisher and Paykel Ltd to help assess the model's validity as well as practical implementation issues. In addition, the thesis has reviewed the literature on the model to determine its key characteristics and differences from the traditional costing model.

II. Thesis Questions

Four questions were posed by the thesis.

Question 1.

Does ABC exist as a distinct costing model or is it merely a more complex allocation system using techniques similar to traditional absorption costing systems?

Question 2

How valid is ABC as a method of costing products for the purpose of determining product mixes in a high technology manufacturing environment?

Question 3

Does ABC produce more useful accounting information than conventional product costing techniques in areas such as inventory valuation for income determination and performance evaluation? Do managers perceive the profitability of individual products as being different from the signals put out by the cost accounting system and does ABC quantify this perception?

Question 4

How feasible and complex are ABC implementations?

A. Question 1

The answer to this question is found in the analysis of the model carried out in Chapters 3, 4 and 5. These three chapters concentrate on definition of the terms required by the model, its variables and the interrelationships between them, its underlying assumptions and its differences from the traditional absorption costing model.

Because of its key assumption that all costs are variable in the long run, ABC is able to use cost drivers, factors which "drive" variability in costs, in order to trace those costs to products. Each cost driver is an activity of some type which can be measured and costed. By analysis of the number of cost drivers a product demands, the cost of a product, in terms of its resource consumption can be calculated. By quantifying resource consumption, the costing model is able to assist managers to control consumption of those resources and assess their best use by selecting the optimal product mix which minimises total resource consumption. Because it averages all resources across all products, the traditional absorption costing model cannot be used for this task.

This absolute demand for cost drivers which have a cause-and-effect relationship with products is what gives ABC its compelling logic.[7] "Cost drivers are replacing

7. Bromwich and Bhimani 1989a.

the antiquated concepts of overhead absorption".[8] Rather than simply allocating costs to products using the general principle that costs attach to products, ABC traces costs to the products which cause them. It identifies the long run variable cost of product in terms of its consumption of production resources.

However, it is impossible to say that ABC is completely different from the absorption costing model. Instead it is an evolution of that model, using similar techniques. The traditional model developed when businesses were simpler so it gave acceptable accuracy in its time through the use of a single cost driver, provided that driver had a cause-and-effect relationship with overhead. ABC has evolved from the absorption costing model in several ways:[9]

1. Whereas under the absorption model, cost drivers (or allocation bases) did not necessarily have to have a cause-and-effect relationship with overhead cost pools, under ABC they must.
2. Under the absorption model, no matter how many pools there were, they were allocated using the same base. Under ABC there are many more cost pools, each with its own distinct cost driver so there is a finer degree of cost tracing.
3. The absorption costing model only allocated factory overhead whereas ABC incorporates a wider range of overheads, including selling and administration costs, into product costs. This enables a product's consumption of all overheads to be accounted for.
4. The activity costs that are incorporated into an ABC product costing provide useful control information in their own right. The absorption model merely traces costs to departments based on the firm's organisational structure.

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8. Ostrenga 1989, p. 51.
9. See Chapter 5 for a more detailed discussion of the differences between the two costing models.

As a result of these improvements, ABC, though evolutionary in design, is revolutionary in its effect on the usefulness of accounting information for internal control purposes.

However, because costs are not charged to individual products, there is still an element of arbitrariness in the ABC model. This problem occurs because activity costs are traced to the total production of a type of product, and an individual product's cost is determined by dividing the total activity costs by the total production volume. This implies that each individual product of one type demands the same amount of an activity as any other product of the same type. This may not be the case.

The tracing of cost pools to products also has an arbitrary element. There may be several possible cost drivers for a particular cost pool, and the ready availability of data may be the deciding factor in the decision to choose one cost driver over another rather than its correlation with the cost pool. However, it is possible to split a cost pool into smaller and smaller pools, relating to more and more detailed activities until the desired level of accuracy is obtained. This is a major strength of the ABC model.

B. Question 2

Modern, high technology factories use sophisticated computer controlled production machinery and are organised to provide flexibility in manufacture. Much of the machinery is set up in flexible manufacturing systems (FMS) which can be quickly adapted to new products as market tastes change. To help make decisions in this environment, a costing system has to be able to capture the complexity and diversity of the manufacturing process. ABC, by use of activities, cost pools associated with activities and cost driver analysis, is able to capture that diversity.

ABC identifies all of the activities carried out in an organisation as it seeks to achieve its goals. Within the factory itself, a multitude of processes are necessary in order to manufacture, test and store products for sale; these processes are each an activity of some sort. Each of these activities has an associated cost pool which has a measurable cost driver and this is used to trace the pool's cost to products. It is possible to calculate cost pools for each of the activities in the production process and determine a cost driver for each.

Through this fine division of costs, ABC is able to capture the diversity of the production process. Each product is costed according to the portion of each process it uses. Processes which are not used to manufacture a product are not charged to it. This does not occur when a traditional absorption model is used because overhead costs are averaged across all products.

As the case study focused only on the support functions of Fisher and Paykel (F & P), this precluded the testing of the hypothesis in question 2 in detail. However, the study did trace the costs of the Plastics department only to the components which the department produced. It also traced the costs of the No. 2 Plant to the components which it produced. In addition, where possible, the costs of the support departments were traced, using cost drivers relating only to those components which demanded them.

Therefore, the case study did trace costs to those components which caused them, (albeit in a fairly crude way). The results of the case study show that ABC did support management's intuitive classification of products such as the belief that export products are more expensive than local products. It also matched the evidence from other case studies that low volume products are more expensive than high volume products despite the traditional model showing the opposite.[10]

C. Question 3

The first part of this question proved to be difficult to answer. On the question of inventory valuation, the conclusion must be drawn that while the influence of the Statement of Standard Accounting Practice No. 4 (SSAP 4) holds sway, ABC is unlikely to be acceptable for this purpose.[11] There seems little intrinsic reason why it could not be used, as long as it is used consistently by valuing both opening and closing inventory on the same basis. However, whether cost-based inventory valuation systems should be used at all for income reporting purposes is a far more important question to be addressed, though outside this thesis.[12]

In the second part of this question, managers were surveyed to find out how well their perception of product profitability performance matched that from the ABC analysis. In fact, the model performed well, with high correlations between management profitability rankings and ABC rankings.[13] However, management profitability ranking also correlated well with the existing system, though this is to be expected given the high correlation between it and the ABC analysis. Because the correlation between the two systems can be explained by the high material content in each product and the homogeneity in the product line, this does not weaken the result significantly.

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10. See Cooper 1986, Cooper and Kaplan 1988.
11. See Chapter 9.
12. The alternative is to value inventory by reference to current market values. If current market values were to be used for income determination, there would be nothing to stop the use of ABC for internal decision-making. ABC is compatible with this method of inventory valuation because ABC measures resource consumption by products for decision-making purposes, rather than deriving a "value". See Chambers R.J., Accounting, Evaluation and Economic Behaviour, Prentice-Hall, Englewood Cliffs, N.J., 1966, for an extensive evaluation of market value accounting.
13. See Chapter 10, Part V.

D. Question 4

Because use of the ABC model requires extensive cost driver data, its implementation is not a trivial exercise. The case study suffered from data problems, having to use surrogate cost drivers because data on the desired cost drivers were not available. Nevertheless, considering the difficulties of lack of time at the site and lack of site personnel with a strong understanding of the model, the analysis was successfully completed. With the provision of a fully briefed team at the site and the ability to iteratively improve the quality of the data feeding into the model, a much more detailed implementation could have been derived successfully.

Most of the implementation problems stemmed from the facts that firstly, the general ledger was not set out to assist the process and secondly, there were no systems in place to provide cost driver data.

The first difficulty introduced some distortion in the cost pools. For example divisional depreciation is entirely charged to administration, severely over-costing activities in this activity centre. However, it was decided that the level of distortion was acceptable, given the experimental nature of the implementation. The second difficulty was overcome through the use of surrogate cost drivers, where data on the desired cost driver was not available. Chapter 9 discusses these difficulties in more detail.

After resolving these two difficulties an acceptable degree of accuracy was available in the figures produced by the model. Because of the high level of computerisation at F & P, the majority of the desired data was able to be obtained even if not in the best format. More importantly, it was quite apparent what steps could be taken to approve the data gathering problems in the future. For example, modifications could be made to the general ledger and computerised data gathering techniques could be devised to obtain cost driver data. These changes should occasion no more difficulty than that required to update the engineered labour standards in the existing system.

When Fisher & Paykel were first approached about this study, management appeared to be interested in carrying out a full implementation of ABC. Disappointingly, F & P have chosen, for the meantime, not to proceed with an implementation. This is mainly because the existing system gives acceptable results and is cheap to run and update. Also, some of the cost driver assumptions in the analysis are not accepted by the divisional management. However, there is no system in place to relate costs to activities and therefore the division uses ad hoc measures to control overhead growth, which is an area where ABC would be very useful.

III. Further Research

Research is necessary into many areas of ABC in order to refine and validate the model. Some of those areas are given in the following list:

1. *Identification and validation of first stage cost drivers.*

   Tracing costs to cost pools is the weakest part of the model as it is currently constituted. While it is easy to say that first stage cost drivers are used, in practice these are hard to identify so "headcount" is frequently used.[14] Analysis is needed to identify how managers decide upon the activities required for their firm and how they decide how much to spend on each activity. This may give clues leading to better identification of first stage cost drivers.

14. Cooper 1986, Cooper and Kaplan 1988.

2. *Identification and validation of second stage cost drivers.*

   Most cost drivers are chosen by reference to experienced managers of activity centres. There has been little statistical analysis apart from that done by Foster and others.[15] It is crucial that those using the model believe in it and this cannot be achieved if there is no proof that the cost drivers used, definitely do drive the costs associated with them.

3. *Investigation of how cost pools, each using a different cost driver, can be amalgamated and only one cost driver used to trace the cost of the amalgamated pool.*

   The simpler and easier a costing system is, the more it will be used and the more regularly it will be able to be updated. Reduction of the number of cost pools by amalgamating them is one method of reducing the complexity of the costing system. However, if the ABC model's goals of accuracy and economic validity are to be maintained, cost pools should be amalgamated only when these goals are not violated. There has been little research in this area apart from that carried out by Cooper.[16]

4. *How over-capacity is to be treated, either within or outside the model.*

   Cooper and Kaplan suggest that over-capacity should be expensed as a period cost.[17] However, this undermines the model because over-capacity should be eliminated by the "long-term variability of costs" assumption. Related to this question is that of how to handle costs which have no cost driver but which tend to be set periodically by management decree. Examples include creche, security and gardening costs.

5. *Verification of the long term variability of cost assumption.*

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15. See Foster and Gupta 1990a, Foster and Gupta 1990b and Berlant, Browning and Foster 1990.
16. Cooper 1989a.
17. Cooper and Kaplan 1988b.

6. *Verification that costs are stable over time.*

   Are ABC costs calculated in one period able to be used in the next period for decision-making? This is a fundamental assumption of the model but it has not been investigated. Time series analysis of companies is required to ascertain the stability of their costs over time. Analysis across industry types is also necessary in order to establish industry norms as one industry is sure to be less stable than another. For example, it is well known that some industries, especially those in electronics have very short product life cycles. This must have an effect on the stability of costs.

7. *Investigation of the ability of ABC to enhance profitability.*

   Are decisions made with ABC better than those made with traditional costing models? It will takes some years to answer this question. It is also fraught with difficulty eg how to isolate the effect of other changes within a company from that of changing the product costing system.

8. *Harmonizing ABC with the target-costing model favoured by many Japanese companies.*

   ABC has been criticised for being inwards looking by focusing on the cost of making a product rather than outwards to the market.[18] Target costing, in particular, has been held up as a better alternative to ABC. However, target costing requires measurement of costs to check on progress towards achievement of the targets and ABC should be a good model for this task.

9. *How are joint costs to be incorporated into the ABC model?*

   While some joint costs can be controlled within the model by its assumptions, others clearly cannot. In agricultural industries joint costs are a major problem especially when, for example, many products are derived from one animal. There appears to have been no research in this area at all.

18. Bromwich and Bhimani 1988; Wells 1990.

IV. Conclusions

In the final analysis, any information system is chosen on a cost/benefit basis. After all "[a]ccounting systems are economic goods. They cost money, just like beer or milk".[19] ABC systems are more complex and, therefore, more costly than the traditional costing models they could replace. Before academics can promote the use of ABC, they must be confident that it gives valid results and especially, that better decisions will follow from its use. This thesis, while unable to satisfy the latter requirement, has examined the model's validity, and concludes that the model produces more accurate results than the traditional absorption costing model because it requires a cause-and-effect relationship between costs, cost drivers and products.

ABC costing analyses can be used for many purposes. The strong cause-and-effect relationship with costs ensures that costings more accurately reflect the resource consumption by products. This means that costings can be used not only for deciding which products will make the best use of scarce resources, but can also be used to control the use of the resources themselves. As an example, the economic consequences of product design decisions would be apparent to engineers thereby enhancing the design process.

However, a lot of research is required into the individual components of the model before it can be used with confidence. Few companies world-wide, have implemented it so far and therefore, the benefits flowing from its implementation are difficult to determine. In particular, it is impossible yet to say if it enhances company profitability. When this question can be answered, ABC may come to be regarded as a major part of a new management accounting paradigm.

19. Horngren and Foster 1987, p. 6.

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PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SOURCE CODE	FCAST USAGE	TOTAL COSTS	COST PER UNIT
203353	REINFORCEMENT	EA	PWIP	A	864711	$19,413.27	$0.0225
209905	COVER CAPACITOR 26MM 36MM	EA	PWIP	A	4571	$19,413.27	$4.2471
313110	TUBE ADAPTOR	EA	SYST	A	15181	$0.00	$0.0000
402015	FOOT SKID PLASTIC	EA	PWIP	A	105952	$19,413.27	$0.1832
402016	PIN-SKID	EA	PWIP	A	105952	$19,413.27	$0.1832
805438	TUBE DRAIN DEFROST	EA	PWIP	A	19764	$19,413.27	$0.9823
815221	RETAINER GASKET H160,220,360	EA	STWP	A	57236	$0.00	$0.0000
815222	RETAINER GASKET H510/701	EA	STWP	A	13824	$0.00	$0.0000
815223	RETAINER GASKET H160	EA	STWP	A	16466	$0.00	$0.0000
815224	RETAINER GASKET H220	EA	STWP	A	20596	$0.00	$0.0000
815225	RETAINER GASKET H360	EA	STWP	A	20174	$0.00	$0.0000
815226	RETAINER GASKET H510	EA	STWP	A	7086	$0.00	$0.0000
815227	RETAINER GASKET H701	EA	STWP	A	6738	$0.00	$0.0000
815295	TUBE SUCT,CAP,ACCUM, ASSY H360 ROT	EA	WIP	A	2992	$0.00	$0.0000
815305	BLANK LID 716MM+1-1 WHITE	EA	STWP	A	8233	$24,840.55	$3.0172
815306	BLANK LID 851MM+1-1 WHITE	EA	STWP	A	14947	$24,840.55	$1.6619
815307	BLANK LID 1216MM+1-1 WHITE	EA	STWP	A	10087	$24,840.55	$2.4626
815308	BLANK LID 1456MM+1-1 WHITE	EA	STWP	A	3543	$24,840.55	$7.0112
815309	BLANK LID 1886MM+1-1 WHITE	EA	STWP	A	3369	$24,840.55	$7.3733
815443	BLANK HF 772MM+1-1 BASE	EA	STWP	A	8233	$24,840.55	$3.0172
815444	BLANK HF 906MM+1-1 BASE	EA	STWP	A	14947	$24,840.55	$1.6619
815445	BLANK HF 1272MM+1-1 BASE	EA	STWP	A	10122	$24,840.55	$2.4541
815446	BLANK HF 1511MM+1-1 BASE	EA	STWP	A	3548	$24,840.55	$7.0013
815447	BLANK HF 1941MM+1-1 BASE	EA	STWP	A	3369	$24,840.55	$7.3733
815494	TUBE CONDENSER BASE HF160	EA	SYST	A	8233	$0.00	$0.0000
815495	TUBE CONDENSER BASE HF220	EA	SYST	A	14947	$0.00	$0.0000
815496	TUBE CONDENSER BASE HF360 RECIP	EA	SYST	A	7130	$0.00	$0.0000
815497	TUBE CONDENSER BASE HF360 ROTARY	EA	SYST	A	2992	$0.00	$0.0000
815499	TUBE CONDENSER BASE HF701	EA	SYST	A	3369	$0.00	$0.0000
815679	RETAINER TORSION BAR	EA	PWIP	A	40179	$19,413.27	$0.4832
815687	LID FOAMED STAND WH H360	EA	FASY	A	1867	$0.00	$0.0000
815688	LID FOAMED STAND WH H510	EA	FASY	A	1752	$0.00	$0.0000
815689	LID FOAMED STAND WH H701	EA	FASY	A	1648	$0.00	$0.0000
815700	LID FOAMED DELUXE WH H160	EA	FASY	A	4948	$0.00	$0.0000
815701	LID FOAMED DELUXE WH H220	EA	FASY	A	8471	$0.00	$0.0000
815702	LID FOAMED DELUXE WH H360	EA	FASY	A	10076	$0.00	$0.0000
815704	LID FOAMED DELUXE WH H701	EA	FASY	A	2240	$0.00	$0.0000
815770	BLANK WRAPPER HF 2508MM+1-1 WHITE	EA	STWP	A	8233	$24,840.55	$3.0172
815771	BLANK WRAPPER HF 2778MM+1-1 WHITE	EA	STWP	A	14947	$24,840.55	$1.6619
815772	BLANK WRAPPER HF 3508MM+1-1 WHITE	EA	STWP	A	10122	$24,840.55	$2.4541
815773	BLANK WRAPPER HF 4121MM+1-1 WHITE	EA	STWP	A	3548	$24,840.55	$7.0013
815774	BLANK WRAPPER HF 4981MM+1-1 WHITE	EA	STWP	A	3369	$24,840.55	$7.3733
815780	HANDLE BASKET LIGHT SIERRA	EA	PWIP	A	2856	$0.00	$0.0000
815796	BLANK BACK & BOTTOM 1206+1-1MM HF	EA	STWP	A	8233	$24,840.55	$3.0172
815797	BLANK BACK & BOTTOM 1340+1-1MM HF	EA	STWP	A	14947	$24,840.55	$1.6619
815798	BLANK BACK & BOTTOM 1705+1-1MM HF	EA	STWP	A	10122	$24,840.55	$2.4541
815799	BLANK BACK & BOTTOM 1945+1-1MM HF	EA	STWP	A	3548	$24,840.55	$7.0013
815800	BLANK BACK & BOTTOM 2374+1-1MM HF	EA	STWP	A	3369	$24,840.55	$7.3733
815801	BLANK HF 1452MM+0.5-0.5 TOP & SIDES	EA	STWP	A	8233	$24,840.55	$3.0172
815802	BLANK HF 1722MM+0.5-0.5 TOP & SIDES	EA	STWP	A	14947	$24,840.55	$1.6619
815803	BLANK HF 2452MM+0.5-0.5 TOP & SIDES	EA	STWP	A	10122	$24,840.55	$2.4541
815804	BLANK HF 3000MM+0.5-0.5 TOP & SIDES	EA	STWP	A	3548	$24,840.55	$7.0013
815805	BLANK HF 3860MM+0.5-0.5 TOP & SIDES	EA	STWP	A	3369	$24,840.55	$7.3733
815806	LINER LID INNER HF160 STANDARD	EA	ABVF	A	2372	$19,413.27	$8.1843
815807	LINER LID INNER HF220 STANDARD	EA	ABVF	A	5649	$19,413.27	$3.4366
815808	LINER LID INNER HF360 STANDARD	EA	ABVF	A	3740	$19,413.27	$5.1907
815809	LINER LID INNER HF510 STANDARD	EA	ABVF	A	1699	$19,413.27	$11.4263
815810	LINER LID INNER HF701 STANDARD	EA	ABVF	A	2201	$19,413.27	$8.8202
815811	LINER LID INNER HF160 DELUXE	EA	ABVF	A	5861	$19,413.27	$3.3123
815812	LINER LID INNER HF220 DELUXE	EA	ABVF	A	9298	$19,413.27	$2.0879
815813	LINER LID INNER HF360 DELUXE	EA	ABVF	A	6347	$19,413.27	$3.0587
815814	LINER LID INNER HF510 DELUXE	EA	ABVF	A	1844	$19,413.27	$10.5278
815815	LINER LID INNER HF701 DELUXE	EA	ABVF	A	1168	$19,413.27	$16.6210
815831	TUBE CONDENSER BASE HF510	EA	SYST	A	3548	$0.00	$0.0000
815839	BASKET HF WIDE WHITE	EA	WIRE	A	13853	$0.00	$0.0000
815840	BASKET HF NARROW WHITE	EA	WIRE	A	55896	$0.00	$0.0000
815851	TUBE CU 370X6.75 SWG ADA SUC ROT PC	EA	SYST	A	6917	$0.00	$0.0000
815855	TUBE CONTROL WELL	EA	TUBE	A	40219	$0.00	$0.0000
815856	TUBE ADAPTOR DISCHARGE	EA	SYST	A	30214	$0.00	$0.0000
815857	TUBE PROCESS HF	EA	SYST	A	40219	$0.00	$0.0000
815882	SPACER ABSORPTION BLOCK	EA	PWIP	A	80358	$19,413.27	$0.2416
815884	TUBE ADAPTOR ACCUMULATOR	EA	SYST	A	40219	$0.00	$0.0000
815913	CAP ABSORPTION BLOCK RH	EA	PWIP	A	3543	$0.00	$0.0000
815919	TUBE ADAPTOR SUCTION ROTARY	EA	SYST	A	3088	$0.00	$0.0000
816081	CLIP CONDENSER	EA	PWIP	A	605624	$19,413.27	$0.0321
816155	WASHER CUP	EA	PWIP	A	17755	$19,413.27	$1.0934
817418	SPACER TANK HF	EA	PWIP	A	335972	$19,413.27	$0.0578
817427	COVER PCB HF	EA	PWIP	A	24518	$19,413.27	$0.7918
817503	TUBE ADAPTOR SUCTION RECIP	EA	SYST	A	30214	$0.00	$0.0000
817510	TUBE SILENCER HF	EA	SYST	A	37227	$0.00	$0.0000
817516	TUBE ADAPTOR DISCHARGE	EA	SYST	A	6917	$0.00	$0.0000
817517	TUBE CU 685X4.75 SWG ADA OIL C IN	EA	SYST	A	6917	$0.00	$0.0000
817518	TUBE ADAPTOR OIL COOLER OUT	EA	SYST	A	6917	$0.00	$0.0000
818034	RETAINER-DRAIN ELBOW	EA	PWIP	A	40219	$19,413.27	$0.4827
818101	TUBE ADAPTOR HF TANK	EA	SYST	A	40219	$0.00	$0.0000
818151	GASKET ASSY H160 OYST	EA	WIP	A	8233	$0.00	$0.0000
818152	GASKET ASSY H220 OYSTER	EA	WIP	A	14947	$0.00	$0.0000
818153	GASKET ASSY H360 OYSTER	EA	WIP	A	10087	$0.00	$0.0000
818154	GASKET ASSY H510 OYSTER	EA	WIP	A	3543	$0.00	$0.0000
818155	GASKET ASSY H701 OYSTER	EA	WIP	A	3369	$0.00	$0.0000
818176	DRAIN STOP HF	EA	PWIP	A	40219	$19,413.27	$0.4827
818177	COVER COMPRESSOR COMPT H/S OYST	EA	PWIP	A	40219	$19,413.27	$0.4827
818179	DRAIN SPOUT HF	EA	PWIP	A	40219	$19,413.27	$0.4827

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SOURCE CODE	FCAST USAGE	TOTAL COSTS	COST PER UNIT
818190	CAP HANDLE PCB OYST HF	EA	PWIP	A	24518	$19,413.27	$0.7918
818198	CAP ABSORPTION BLOCK RH	EA	PWIP	A	40179	$19,413.27	$0.4832
818199	CAP ABSORPTION BLOCK LH	EA	PWIP	A	36636	$19,413.27	$0.5299
818203	HANDLE BASKET FRIG HF C'GREEN	EA	PWIP	A	20996	$19,413.27	$0.9246
818204	HANDLE BASKET KELV HF PURPLE	EA	PWIP	A	87310	$19,413.27	$0.2223
818205	HANDLE BASKET SHACK HF WHITE	EA	PWIP	A	42348	$19,413.27	$0.4584
818207	RETAINER LOCK HF OYST	EA	PWIP	A	17755	$19,413.27	$1.0934
818208	PCB PANEL HF OYST	EA	PWIP	A	16400	$19,464.43	$1.1869
818209	KNOB THERMOSTAT HF OYST	EA	PWIP	A	40219	$19,413.27	$0.4827
850027	GROMMET INJECTION MOULDED	EA	PWIP	A	15958	$19,413.27	$1.2165
850075	DUCT HARNESS	EA	PWIP	A	44056	$19,413.27	$0.4406
850118	BLANK BACK PANEL 534+0.5-0.5	EA	STWP	A	5065	$24,840.55	$4.9044
850119	BLANK UNIT COMPARTMENT 495+1.5-0	EA	STWP	A	52976	$24,840.55	$0.4689
850265	PIN COMPRESSOR MNTG	EA	PWIP	A	746008	$19,413.27	$0.0260
850291	PANEL BACK EVAP P120	EA	PWIP	A	4882	$19,413.27	$3.9765
850292	BRACKET EVAP SUPPT P110	EA	PWIP	A	4882	$19,413.27	$3.9765
850332	COVER CONTROL BOX P800	EA	PWIP	A	44056	$19,413.27	$0.4406
850333	BASE CONTROL BOX	EA	PWIP	A	44056	$19,413.27	$0.4406
850334	SWITCH ROCKER LIGHT	EA	PWIP	A	44056	$19,413.27	$0.4406
850340	COVER CONTROL WIRING P800	EA	PWIP	A	44056	$19,413.27	$0.4406
850346	KNOB - CONTROL	EA	PWIP	A	38773	$19,413.27	$0.5007
850349	PLATE DIAL MOULDED 853352	EA	PWIP	A	42000	$0.00	$0.0000
850360	BASE TERMINAL BLOCK	EA	PWIP	A	196507	$19,413.27	$0.0988
850361	LID TERMINAL BLOCK	EA	PWIP	A	179392	$19,413.27	$0.1082
850473	RETAINER GASKET ENDS	EA	STWP	A	137910	$0.00	$0.0000
850749	TRAY ICE CUBE	EA	PWIP	A	257910	$19,413.27	$0.0753
850801	SPACER CONDENSER STOP	EA	PWIP	A	312576	$19,413.27	$0.0621
851152	DUCT DRAIN BOTTOM	EA	PWIP	A	10779	$0.00	$0.0000
851302	COVER EVAP PLATE	EA	PWIP	A	28098	$19,413.27	$0.6909
851387	PLATE DEFROST HEATER	EA	PWIP	A	38877	$19,413.27	$0.4994
851655	COVER DRAIN TUBE 851800	EA	PWIP	A	28584	$19,413.27	$0.6792
851800	COVER DRAIN TUBE MOULDED	EA	PWIP	A	32000	$0.00	$0.0000
852045	SHELF FC BTTM WHITE 525	EA	WIRE	A	65958	$244.46	$0.0037
852205	TRIM V.F TOP	EA	PWIP	A	8920	$19,413.27	$2.1764
852206	TRIM V.F & F.C BOTTOM	EA	PWIP	A	19213	$19,413.27	$1.0104
852400	LID CONTROL BOX	EA	PWIP	A	17115	$19,413.27	$1.1343
852704	BASKET FORMED FC	EA	WIRE	A	19213	$0.00	$0.0000
853118	BLANK BACK PANEL 922.5X0.4	EA	STPP	A	21160	$24,840.55	$1.1739
853287	SPACER-EVAP.	EA	PWIP	A	297	$19,413.27	$65.3645
853291	PIN HINGE DOOR EVAPORATOR	EA	PWIP	A	297	$19,413.27	$65.3645
853352	PLATE CTRL DIAL H/S850349	EA	PWIP	A	40455	$19,413.27	$0.4799
853761	TRAY CHILL BASE	EA	PWIP	A	228	$244.46	$1.0722
853762	TRAY CHILL FLAP	EA	PWIP	A	228	$0.00	$0.0000
855207	TRIM VF 1029MM	LG	EXTR	A	8148	$19,413.27	$2.3826
855214	BLANK TOP & SIDES 2562+1-1	EA	STWP	A	4074	$24,840.55	$6.0973
855219	BLANK BACK & BOTTOM 1449+1-1MM	EA	STWP	A	4074	$24,840.55	$6.0973
855241	TUBE CONTROL WELL	EA	WIP	A	8920	$0.00	$0.0000
856177	TUBE TRANSFER EVAP FC/EVAP PC	EA	WIP	A	17805	$0.00	$0.0000
856202	TRIM FC TANK	EA	PWIP	A	17805	$19,413.27	$1.0903
856310	TUBE SUCTION & CAP ASSY C170T	EA	SYST	A	11508	$0.00	$0.0000
856311	TUBE SUCTION & CAPILLARY LINE ASSY	EA	WIP	A	10293	$0.00	$0.0000
856336	COVER LAMP P800	EA	PWIP	A	44056	$19,413.27	$0.4406
857118	BLANK BACK PANEL 1310.5+1-1	EA	STWP	A	26454	$24,840.55	$0.9390
857472	RETAINER GASKET SIDES	EA	STWP	A	19728	$0.00	$0.0000
859207	TRIM VF 1417MM	LG	EXTR	A	9692	$19,413.27	$2.0030
859214	BLANK TOP & SIDES 3338+1-1	EA	STWP	A	4846	$24,840.55	$5.1260
859219	BLANK BACK & BOTTOM 1837+1-1MM	EA	STWP	A	4846	$24,840.55	$5.1260
861177	TUBE TRANSFER EVAP FC/EVAP P.C.	EA	WIP	A	10293	$0.00	$0.0000
861201	TRIM FC TOP	EA	PWIP	A	10293	$19,413.27	$1.8861
861207	TRIM VF 654MM	LG	EXTR	A	20586	$19,413.27	$0.9430
861223	BLANK BACK & BOTTOM 1117+1-1MM	EA	STWP	A	10293	$24,840.55	$2.4133
861225	BLANK TOP & SIDES 1898+1-1	EA	STWP	A	10293	$24,840.55	$2.4133
861310	TUBE SUCTION & CAP ASSY C250T	EA	SYST	A	6297	$0.00	$0.0000
871011	TRIM CONTROL KNOB RED SHACK	EA	PWIP	A	12654	$0.00	$0.0000
871012	TRIM CONTROL KNOB WHITE KELV	EA	PWIP	A	64364	$0.00	$0.0000
871013	TRIM CONTROL KNOB BLUE FRIG	EA	PWIP	A	19249	$0.00	$0.0000
871014	TUBE TRANSFER 635 T-MODELS	EA	SYST	A	49974	$0.00	$0.0000
871023	BLANK BASE PANEL 642+1-1	EA	STWP	A	308	$0.00	$0.0000
871024	BLANK UNIT COMPARTMENT 607+1-1	EA	STWP	A	102520	$24,840.55	$0.2423
871027	BLANK BACK 1410.5+1-1MM	EA	STWP	A	40715	$24,840.55	$0.6101
871033	CAM CONT. BOX 635	EA	PWIP	A	94696	$19,413.27	$0.2050
871034	COVER CONTROL BOX TOP 635	EA	PWIP	A	94696	$19,413.27	$0.2050
871118	KNOB CONTROL SHACK L.SIERRA	EA	PWIP	A	4000	$0.00	$0.0000
871125	COVER BUTTER TRAY ALL BRANDS	EA	PWIP	A	21034	$19,413.27	$0.9229
871171	BRACKET SHELF SUPPORT FC LONG	EA	PWIP	A	249306	$19,413.27	$0.0779
871174	WASHER EVAP COVER	EA	PWIP	A	186295	$19,413.27	$0.1042
871175	COVER EVAP SCREWS	EA	PWIP	A	149036	$19,413.27	$0.1303
871191	SPACER TUBE	EA	PWIP	A	985953	$19,413.27	$0.0197
871193	KNOB CONTROL ASSY SHACK	EA	PWIP	A	40	$0.00	$0.0000
871222	SHELF FC TOP NO FROST WHITE	EA	WIRE	A	17489	$0.00	$0.0000
871232	EXTRUSION CROSS RAIL	LG	EXTR	A	10535	$0.00	$0.0000
871233	BIN HC	EA	PWIP	A	10535	$19,413.27	$1.8427
871234	TUBE TRANSFER BTTM FC	EA	WIP	A	22075	$0.00	$0.0000
871307	BLANK BACK 1310.5+1-1MM	EA	STWP	A	27729	$24,840.55	$0.8958
871308	BLANK BACK 1140.5+1-1MM	EA	STWP	A	31059	$24,840.55	$0.7998
871320	SHELF TOP FC WHITE	EA	WIRE	A	19229	$0.00	$0.0000
871325	COVER FINISHED HC H/S	EA	PWIP	A	8728	$19,413.27	$2.2243
871344	TUBE CU 147X6.35 PLAIN	EA	WIP	A	133440	$0.00	$0.0000
871384	SHELF FC TOP NO FROST BASE WHITE	EA	WIRE	A	17489	$0.00	$0.0000
871396	BLANK BACK & BOTTOM 1099+1-1MM	EA	STWP	A	21962	$24,840.55	$1.1311
871397	BLANK BACK & BOTTOM 856+1-1MM	EA	STWP	A	36724	$24,840.55	$0.6764
871398	BLANK TOP & SIDES 1274+1-1	EA	STWP	A	36724	$24,840.55	$0.6764
871415	BLANK WRAPPER 3492+1-1 WHITE	EA	STWP	A	29587	$24,840.55	$0.8396

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SOURCE CODE	FCAST USAGE	TOTAL COSTS	COST PER UNIT
871416	BLANK WRAPPER 3836+1-1 WHITE	EA	STWP	A	31143	$24,840.55	$0.7976
871417	BLANK WRAPPER 4035+1-1 WHITE	EA	STWP	A	31397	$24,840.55	$0.7912
871419	BLANK WRAPPER 3492+1-1 ALMOND	EA	STWP	A	270	$24,840.55	$92.0020
871420	BLANK WRAPPER 3836+1-1 ALMOND	EA	STWP	A	579	$24,840.55	$42.9025
871421	BLANK WRAPPER 4035+1-1 ALMOND	EA	STWP	A	1657	$24,840.55	$14.9913
871456	GROMMET EVAP TUBES	EA	PWIP	A	514502	$19,413.27	$0.0377
871459	REINFORCEMENT SMALL HC	EA	PWIP	A	52588	$19,413.27	$0.3692
871466	LINER DR INNER HC	EA	ABVF	A	10535	$19,413.27	$1.8427
871644	CLIP DUCT	EA	PWIP	A	285351	$19,413.27	$0.0680
871654	PARTITION PLASTICISED HC	EA	WIRE	A	10535	$0.00	$0.0000
871855	PLUG HINGE PIN HOLE SIERRA	EA	PWIP	A	21313	$0.00	$0.0000
871856	WASHER HINGE BEARING 1MM	EA	PWIP	A	2819	$0.00	$0.0000
871861	BRACKET BOTTOM HINGE LH SIERRA	EA	PWIP	A	297	$0.00	$0.0000
871862	BRACKET BOTTOM HINGE RH SIERRA	EA	PWIP	A	10446	$0.00	$0.0000
871896	LINER BUTTER COMPT H/S 871078	EA	PWIP	A	65400	$19,413.27	$0.2968
871897	TUBE CONTROL WELL 635 VF	EA	WIP	A	8195	$0.00	$0.0000
871995	EXTRUSION CABLE HOLDER	EA	EXTR	A	20278	$0.00	$0.0000
872081	SHELF FC TOP WHITE 525	EA	WIRE	A	17805	$0.00	$0.0000
872170	DOOR DIARY MOULD ALL BRANDS 525	EA	PWIP	A	30	$0.00	$0.0000
872178	SHELF DOOR LGE HSM872175FRIG	EA	PWIP	A	90	$0.00	$0.0000
872189	BLANK BACK & BOTTOM 1740+1-1MM23	EA	STWP	A	8195	$24,840.55	$3.0312
872190	BLANK TOP & SIDES 3072+1-1	EA	STWP	A	8195	$24,840.55	$3.0312
872202	TRIM VF TOP	EA	PWIP	A	8195	$19,413.27	$2.3689
872208	EXTRUSION TRIM FC F310	LG	EXTR	A	16390	$19,413.27	$1.1845
872244	SHELF PC WHITE	EA	WIRE	A	97922	$0.00	$0.0000
872247	SHELF TALL STORAGE WHITE	EA	WIRE	A	23408	$0.00	$0.0000
872255	LINER DR INNER PC P,C120,170T,240B	EA	ABVF	A	26762	$19,413.27	$0.7254
872256	LINER DR INNER PC P,C190,250T	EA	ABVF	A	12172	$19,413.27	$1.5949
872257	LINER DR INNER PC C270	EA	ABVF	A	5018	$19,413.27	$3.8687
872258	LINER DR INNER FC C170T,250	EA	ABVF	A	17805	$19,413.27	$1.0903
872259	LINER DR INNER FC C240B	EA	ABVF	A	10293	$19,413.27	$1.8861
872260	LINER DR INNER FC F160	EA	ABVF	A	4074	$19,413.27	$4.7652
872261	LINER DR INNER FC F230	EA	ABVF	A	4846	$19,413.27	$4.0060
872280	SHELF PC WHITE	EA	WIRE	A	10358	$0.00	$0.0000
872287	PANEL SIDE EVAP	EA	PWIP	A	594	$19,413.27	$32.6823
872314	TUBE SILENCER	EA	SYST	A	74293	$0.00	$0.0000
872326	RETAINER GASKET SIDE 749.2MM	EA	STWP	A	98140	$0.00	$0.0000
872329	RETAINER GASKET SIDE 1137MM	EA	STWP	A	8462	$0.00	$0.0000
872332	RETAINER GASKET SIDE 361.2MM	EA	STWP	A	35610	$0.00	$0.0000
872447	KNOB LIGHT SWITCH SHACK	EA	PWIP	A	40	$0.00	$0.0000
872462	TUBE COMPRESSOR DISCHARGE	EA	SYST	A	8195	$0.00	$0.0000
872468	TUBE ADAPTOR SUCTION	EA	TUBE	A	93860	$0.00	$0.0000
872472	LINER DR INNER FC F310	EA	ABVF	A	8175	$19,413.27	$2.3747
872519	TUBE TRANSFER N395B	EA	SYST	A	19764	$0.00	$0.0000
872529	DRAIN OUTLET	EA	PWIP	A	10293	$19,413.27	$1.8861
872530	DRAIN OUTLET ELBOW	EA	PWIP	A	10293	$19,413.27	$1.8861
872557	GROMMET DUCT	EA	PWIP	A	411123	$19,413.27	$0.0472
872561	DUCT HARNESS HC	EA	PWIP	A	44099	$19,413.27	$0.4402
872581	TUBE TRANSFER 635 'T' F/F MODELS	EA	SYST	A	17495	$0.00	$0.0000
872633	BASKET FC DOOR WHITE	EA	WIRE	A	36718	$0.00	$0.0000
872677	NAMEPLATE MOULDED SHACK LOCAL	EA	PWIP	A	2000	$0.00	$0.0000
872678	NAMEPLATE SHACK HSM872677 LOCAL	EA	PWIP	A	1085	$0.00	$0.0000
872689	EVAP PLATE & TAIL ASSY UNPAINTED	EA	SYST	A	21221	$0.00	$0.0000
872690	EVAP & SUCTION LINE ASSY UNPAINTED	EA	SYST	A	4631	$0.00	$0.0000
872693	CONDENSER ASSY UNPAINTED	EA	SYST	A	20800	$0.00	$0.0000
872694	CONDENSER ASSY UNPAINTED	EA	SYST	A	25000	$0.00	$0.0000
872697	CONDENSER ASSY 994MM UNPAINTED	EA	SYST	A	30159	$0.00	$0.0000
872701	BLANK DOOR WRAP 345+1-1 WHITE	EA	STWP	A	16970	$24,840.55	$1.4638
872702	BLANK DOOR WRAP 405+1-1 WHITE	EA	STWP	A	41280.	$24,840.55	$0.6018
872703	BLANK DOOR WRAP 575+1-1 WHITE	EA	STWP	A	18719	$24,840.55	$1.3270
872704	BLANK DOOR WRAP 675+1-1 WHITE	EA	STWP	A	20736	$24,840.55	$1.1979
872705	BLANK DOOR WRAP 709+1-1 WHITE	EA	STWP	A	6029	$24,840.55	$4.1202
872706	BLANK DOOR WRAP 733+1-1 WHITE	EA	STWP	A	36792	$24,840.55	$0.6752
872707	BLANK DOOR WRAP 893+1-1 WHITE	EA	STWP	A	55430	$24,840.55	$0.4481
872708	BLANK DOOR WRAP 1063+1-1 WHITE	EA	STWP	A	12424	$24,840.55	$1.9994
872709	BLANK DOOR WRAP 1121+1-1 WHITE	EA	STWP	A	15674	$24,840.55	$1.5848
872710	BLANK DOOR WRAP 1163+1-1 WHITE	EA	STWP	A	4632	$24,840.55	$5.3628
872711	BLANK DOOR WRAP 1345+1-1 WHITE	EA	STWP	A	17361	$24,840.55	$1.4308
872712	BLANK DOOR WRAP 1513+1-1 WHITE	EA	STWP	A	9864	$24,840.55	$2.5183
872715	BLANK DOOR WRAP 405+1-1 ALMOND	EA	STWP	A	3096	$24,840.55	$8.0234
872717	BLANK DOOR WRAP 675+1-1 ALMOND	EA	STWP	A	338	$0.00	$0.0000
872718	BLANK DOOR WRAP 709+1-1 ALMOND	EA	STWP	A	933	$0.00	$0.0000
872720	BLANK DOOR WRAP 893+1-1 ALMOND	EA	STWP	A	603	$0.00	$0.0000
872721	BLANK DOOR WRAP 1063+1-1 ALMOND	EA	STWP	A	579	$0.00	$0.0000
872723	BLANK DOOR WRAP 1163+1-1 ALMOND	EA	STWP	A	386	$0.00	$0.0000
872724	BLANK DOOR WRAP 1345+1-1 ALMOND	EA	STWP	A	5	$0.00	$0.0000
872727	BLANK DOOR WRAP 345+1-1 F/A	EA	STWP	A	835	$0.00	$0.0000
872732	BLANK DOOR WRAP 733+1-1 F/A	EA	STWP	A	263	$0.00	$0.0000
872735	BLANK DOOR WRAP 1121+1-1 F/A	EA	STWP	A	572	$0.00	$0.0000
872753	BLANK DOUBLE DOOR 690+1-1 WHITE	EA	STWP	A	8000	$24,840.55	$3.1051
872754	BLANK DOUBLE DOOR 810+1-1 WHITE	EA	STWP	A	19750	$24,840.55	$1.2577
872756	BLANK DOUBLE DOOR 810+1-1 ALMO'D	EA	STWP	A	1625	$24,840.50	$15.2865
872757	BLANK DOUBLE DOOR 690+1-1 F/A	EA	STWP	A	318	$0.00	$0.0000
872762	SPACER EVAPORATOR 20MM	EA	PWIP	A	8378	$0.00	$0.0000
872765	TUBE SILENCER BTTM FC	EA	WIP	A	32368	$0.00	$0.0000
872785	KNOB PUSH BUTTON	EA	PWIP	A	6085	$0.00	$0.0000
872786	BUTTON DEFROST CONTROL	EA	PWIP	A	6000	$0.00	$0.0000
872787	KNOB CONTROL ASSY "COMPACT SERIES"	EA	WIP	A	5198	$19,413.27	$3.7348
872796	TUBE 425MMX3/16 SWAGE ADA COND. RF	EA	SYST	A	4530	$0.00	$0.0000
872797	TUBE ADAPTOR OIL COOL/COND	EA	SYST	A	55194	$0.00	$0.0000
872798	TUBE ADAPTOR 300X4.75 SWG 190,C270	EA	SYST	A	13838	$0.00	$0.0000
872806	LINER PC FORMED & TRIMMED 120,170T	EA	ABVF	A	16573	$19,413.27	$1.1714
872807	LINER PC FORMED & TRIMMED C240B	EA	ABVF	A	10293	$19,413.27	$1.8861

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872808	LINER PC FORMED & TRIMMED 190,250T	EA	ABVF	A	12172	$19,413.27	$1.5949
872809	LINER PC FORMED & TRIMMED C270	EA	ABVF	A	5018	$19,413.27	$3.8687
872849	PLATE REINFORCEMENT	EA	PLAS	A	95117	$19,413.27	$0.2041
872866	HEATER ASSY HC (110V)	EA	WIP	A	472	$0.00	$0.0000
872920	SUCTION & CAPILLARY ASSY C365H	EA	SYST	A	2740	$0.00	$0.0000
872921	SUCTION & CAPILLARY ASSY C335T	EA	SYST	A	13928	$0.00	$0.0000
872922	SUCTION & CAPILLARY ASSY C390T	EA	SYST	A	13056	$0.00	$0.0000
872923	SUCTION & CAPILLARY ASSY C420T	EA	SYST	A	13549	$0.00	$0.0000
872924	SUCTION & CAPILLARY ASSY C380B	EA	SYST	A	14673	$0.00	$0.0000
872925	SUCTION & CAPILLARY ASSY C410B,N395	EA	SYST	A	27166	$0.00	$0.0000
872926	SUCTION & CAPILLARY ASSY C370	EA	SYST	A	10005	$0.00	$0.0000
872931	HEATER ASSY 100-115V SHORT 635	EA	WIP	A	495	$0.00	$0.0000
873031	COVER BUTTER COMPARTMENT	EA	PWIP	A	65400	$19,413.27	$0.2968
873161	LINER PC AS FORMED & TRIMMED	EA	ABVF	A	13928	$19,414.16	$1.3939
873185	CONDENSER ASSY UNPAINTED P/C120	EA	SYST	A	5065	$0.00	$0.0000
873202	TRIM FC TOP FREEZER	EA	PWIP	A	36724	$19,574.62	$0.5330
873203	SHELF HALF FRONT WHITE	EA	WIRE	A	95296	$0.00	$0.0000
873205	SHELF HALF REAR WHITE	EA	WIRE	A	95296	$0.00	$0.0000
873220	TUBE SUCTION & ACCUMULATOR ASSY	EA	WIP	A	8920	$0.00	$0.0000
873221	TUBE & ACCUM ASSY F310	EA	WIP	A	8195	$0.00	$0.0000
873228	TRAY WATER OVERFLOW	EA	PWIP	A	5839	$19,413.27	$3.3248
873229	TRAY WATER OVERFLOW ASSY	EA	WIP	A	5839	$0.00	$0.0000
873230	CAP INSULATION	EA	PWIP	A	64220	$19,413.27	$0.3023
873259	TUBE WATER OVERFLOW TRAY	EA	SYST	A	5839	$551.40	$0.0944
873267	EVAP FROST FREE AS FORMED	EA	WIP	A	32055	$0.00	$0.0000
873315	TRIM SHELF PC WH/WH 635	EA	EXTR	A	23969	$19,413.27	$0.8099
873343	COVER DAIRY HS F&P 635	EA	PWIP	A	15052	$19,413.27	$1.2897
873347	BIN CRISP 'B' HS F&P 635	EA	PWIP	A	11206	$19,413.27	$1.7324
873352	BIN CRISP 'T' HS F&P 635	EA	PWIP	A	6753	$19,413.27	$2.8748
873393	EVAP PLATE PIERCED C120	EA	COOL	A	107	$0.00	$0.0000
873405	CONDENSER ASSY SPLIT UNPAINTED 1298	EA	SYST	A	21923	$0.00	$0.0000
873411	CONDENSER ASSY 1298MM UNPAINTED	EA	SYST	A	45254	$0.00	$0.0000
873413	SHELF PC 635 WHITE	EA	WIRE	A	194259	$0.00	$0.0000
873443	BLANK BASE PANEL 532+1-1 WW	EA	STPP	A	586	$24,840.55	$42.3900
873446	DUCT SATCHET ASSY 635	EA	MISC	A	18804	$0.00	$0.0000
873449	CAP DOOR END WW 525	EA	PWIP	A	1926	$19,413.27	$10.0796
873450	LINER DR INNER FC 635 TOP FREEZER	EA	ABVF	A	36724	$19,413.27	$0.5286
873457	TRIM SHELF FC 525 WW	EA	PWIP	A	564	$19,413.27	$34.4207
873458	REINFORCEMENT LARGE	EA	PWIP	A	52588	$19,413.27	$0.3692
873465	LINER DR INNER PC C365,335,380,410	EA	ABVF	A	58507	$19,413.27	$0.3318
873468	TUBE ADAPTOR SUCTION	EA	SYST	A	3719	$0.00	$0.0000
873469	SHELF DOOR LGE HSM873827 WW	EA	PWIP	A	752	$19,413.27	$25.8155
873470	TRIM PC SHELF 525 WW	EA	PWIP	A	1213	$19,413.27	$16.0043
873473	KNOB CONTROL ASSY P120	EA	WIP	A	85	$19,413.27	$228.3914
873474	BUTTON DEFROST CONTROL OYST	EA	PWIP	A	85	$19,413.27	$228.3914
873475	DOOR EVAP HSM873835 WW P120	EA	PWIP	A	85	$19,413.27	$228.3914
873476	MEAT TRAY HSM872226 WW P120	EA	PWIP	A	85	$19,413.27	$228.3914
873477	TRIM SHELF T.ST WW 525	EA	PWIP	A	331	$19,413.27	$58.6504
873478	BIN CRISP LGE HSM872613 525 'T'	EA	PWIP	A	311	$19,413.27	$62.4221
873479	COVER CENTRE RAIL 525 WW	EA	PWIP	A	6310	$19,413.27	$3.0766
873480	BLANK BASE PANEL 642+1-1 WH/WH	EA	STWP	A	10917	$24,840.55	$2.2754
873481	BRACKET BOTTOM HINGE LH WH/WH	EA	PWIP	A	11811	$19,413.27	$1.6437
873482	BRACKET BOTTOM HINGE RH WH/WH	EA	PWIP	A	11811	$19,413.27	$1.6437
873483	PLUG HINGE PIN HOLE WH/WH	EA	PWIP	A	12397	$19,413.27	$1.5660
873484	WASHER HINGE BEARING 1MM WH/WH	EA	PWIP	A	26264	$19,413.27	$0.7392
873486	RAIL CENTRE 635 WH/WH	EA	WIP	A	2292	$0.00	$0.0000
873488	COVER HINGE TOP BRACKET WH/WH	EA	PWIP	A	11811	$19,413.27	$1.6437
873489	CAP DOOR END 635 WH/WH	EA	PWIP	A	46618	$19,413.27	$0.4164
873490	PLUG DOOR END CAP WH/WH	EA	PWIP	A	48544	$19,413.27	$0.3999
873492	TRIM CONTROL KNOB OYSTER	EA	PWIP	A	10727	$0.00	$0.0000
873494	KNOB CONTROL ASSY F&P WH/WH	EA	PWIP	A	10727	$0.00	$0.0000
873495	KNOB CONTROL F&P WH/WH	EA	PWIP	A	10727	$19,413.27	$1.8098
873496	KNOB LIGHT SWITCH F&P WH/WH	EA	PWIP	A	10727	$19,413.27	$1.8098
873497	BIN EGG H/S F&P DIAMOND	EA	PWIP	A	9092	$19,413.27	$2.1352
873498	TRAY BUTTER F&P WH/WH	EA	PWIP	A	59322	$19,413.27	$0.3273
873499	BIN ICE H/S F&P DIAMOND	EA	PWIP	A	10713	$19,413.27	$1.8121
873501	CONTROL SLIDE HC WH/WH	EA	PWIP	A	2292	$19,515.58	$8.5147
873502	TRAY HC WH/WH	EA	PWIP	A	2292	$19,413.27	$8.4700
873504	SHELF FLAP H/S WH/WH	EA	PWIP	A	331	$19,413.27	$58.6504
873506	TRIM SHELF T.ST & TOP FC WHITE	EA	EXTR	A	233	$19,413.27	$83.3188
873507	TRIM SHELF TOP FC 635 WH/WH	EA	EXTR	A	4189	$19,413.27	$4.6343
873508	SHELF DOOR LGE M873518 H/S WH/WH	EA	PWIP	A	20097	$19,413.27	$0.9660
873509	DOOR BUTTER COMPARTMENT H/S DIAMOND	EA	PWIP	A	6078	$19,413.27	$3.1940
873510	WASHER HINGE BEARING 4.8MM WH/WH	EA	PWIP	A	9652	$19,413.27	$2.0113
873512	COVER DAIRY H/S DIAMOND	EA	PWIP	A	5529	$0.00	$0.0000
873516	COVER CENTRE RAIL 635 WH/WH	EA	PWIP	A	20854	$19,413.27	$0.9309
873534	TRIM BASKET FRONT WH/WH	EA	PWIP	A	13696	$19,413.27	$1.4174
873545	GASKET ASSY PC C420T,N405T OYSTER	EA	WIP	A	5754	$0.00	$0.0000
873553	COVER HC H/S F&P WH/WH	EA	PWIP	A	1801	$19,413.27	$10.7792
873642	GASKET & MAG STRIP A 619MM OYST	EA	PWIP	A	384700	$0.00	$0.0000
873649	GASKET & MAG STRIP A 1167MM OYST	EA	PWIP	A	11508	$0.00	$0.0000
873650	GASKET & MAG STRIP A 679MM OYST	EA	PWIP	A	43924	$0.00	$0.0000
873651	GASKET & MAG STRIP A 897MM OYST	EA	PWIP	A	117014	$0.00	$0.0000
873658	GASKET & MAG STRIP A 1067MM OYST	EA	PWIP	A	26112	$0.00	$0.0000
873659	GASKET & MAG STRIP A 409MM OYST	EA	PWIP	A	94518	$0.00	$0.0000
873660	GASKET & MAG STRIP A 715MM OYST	EA	PWIP	A	15590	$0.00	$0.0000
873661	GASKET & MAG STRIP A 1349MM OYST	EA	PWIP	A	36280	$0.00	$0.0000
873662	GASKET & MAG STRIP A 579MM OYST	EA	PWIP	A	39754	$0.00	$0.0000
873663	GASKET & MAG STRIP A 1512MM OYST	EA	EXTR	A	19728	$0.00	$0.0000
873665	GASKET & MAG STRIP A 731.5MM OYST	EA	EXTR	A	74110	$0.00	$0.0000
873666	GASKET & MAG STRIP A 508MM OYST	EA	EXTR	A	161940	$0.00	$0.0000
873667	GASKET & MAG STRIP A 1119.5MM OYST	EA	EXTR	A	32492	$0.00	$0.0000
873668	GASKET & MAG STRIP A 343.5MM OYST	EA	EXTR	A	35610	$0.00	$0.0000

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SOURCE CODE	FCAST USAGE	TOTAL COSTS	COST PER UNIT
873680	EVAP PLATE & TAIL ASSY UNPAINTED	EA	SYST	A	10315	$0.00	$0.0000
873681	EVAP PLATE & TAIL ASSY UNPAINTED	EA	SYST	A	189	$0.00	$0.0000
873682	EVAP PLATE & TAIL ASSY UNPAINTED	EA	SYST	A	5908	$0.00	$0.0000
873683	EVAP PLATE & TAIL ASSY UNPAINTED	EA	SYST	A	153	$0.00	$0.0000
873697	DOOR DIARY HSM872170 525 WW	EA	PWIP	A	455	$19,413.27	$42.6665
873698	HANDLE PACK ASSY C270,F230 WW	EA	WIP	A	76	$0.00	$0.0000
873699	HANDLE DOOR WH/WH	EA	PWIP	A	76	$19,413.27	$255.4378
873790	BLANK BASE PANEL 642+1-1 OYSTER	EA	STWP	A	92087	$24,840.55	$0.2698
873791	BRACKET BOTTOM HINGE LH OYSTER	EA	PWIP	A	144477	$19,413.27	$0.1344
873792	BRACKET BOTTOM HINGE RH OYSTER	EA	WIP	A	134031	$19,413.27	$0.1448
873793	PLUG HINGE PIN HOLE OYSTER	EA	PWIP	A	249685	$19,413.27	$0.0778
873796	CAP DOOR END OYSTER 635	EA	PWIP	A	369420	$19,413.27	$0.0526
873798	COVER HINGE TOP BRACKET OYSTER	EA	PLAS	A	144477	$19,413.27	$0.1344
873799	PLUG DOOR END CAP OYSTER	EA	PWIP	A	411118	$19,413.27	$0.0472
873800	BLANK WRAPPER 3492+1-1 S'STONE	EA	STWP	A	1089	$24,840.55	$22.8104
873801	BLANK WRAPPER 3836+1-1 S'STONE	EA	STWP	A	1624	$24,840.55	$15.2959
873802	BLANK WRAPPER 4035+1-1 S'STONE	EA	STWP	A	2044	$24,840.55	$12.1529
873803	BLANK DOOR WRAP 1345+1-1 S'STONE	EA	STWP	A	774	$24,840.55	$32.0937
873804	BLANK DOOR WRAP 1163+1-1 S'STONE	EA	STWP	A	323	$24,840.55	$76.9057
873806	BLANK DOOR WRAP 1063+1-1 S'STONE	EA	STWP	A	466	$24,840.55	$53.3059
873807	BLANK DOOR WRAP 893+1-1 S'STONE	EA	STWP	A	2361	$24,840.55	$10.5212
873809	BLANK DOOR WRAP 709+1-1 S'STONE	EA	STWP	A	833	$24,840.55	$29.8206
873810	BLANK DOOR WRAP 675+1-1 S'STONE	EA	STWP	A	888	$24,840.55	$27.9736
873811	BLANK DOOR WRAP 575+1-1 S'STONE	EA	STWP	A	1158	$24,840.55	$21.4513
873812	BLANK DOOR WRAP 405+1-1 S'STONE	EA	STWP	A	2770	$0.00	$0.0000
873813	BLANK DOUBLE DOOR 810+1-1 S'STONE	EA	STWP	A	1135	$24,840.55	$21.8859
873817	BIN ICE M871129 H/S FRIG	EA	PWIP	A	21381	$19,413.27	$0.9080
873819	TRIM BASKET FRONT FRIG FC	EA	PWIP	A	22851	$19,413.27	$0.8496
873820	WASHER HINGE BEARING 4.8MM OYST	EA	PWIP	A	147041	$19,413.27	$0.1320
873821	KNOB CONTROL ASSY FRIG	EA	PWIP	A	15249	$19,413.27	$1.2731
873823	KNOB LIGHT SWITCH FRIG 635	EA	PWIP	A	15249	$19,413.27	$1.2731
873824	BIN EGG M871129 H/S FRIG	EA	PWIP	A	24106	$19,413.27	$0.8053
873826	BIN CRISP 'T' M872607 H/S FRIG 635	EA	PWIP	A	11966	$19,413.27	$1.6224
873828	TRIM SHELF PC FRIG 635	EA	PWIP	A	44121	$19,413.27	$0.4400
873829	SHELF FLAP M873830 H/S FRIG	EA	PWIP	A	5558	$19,413.27	$3.4929
873831	TRIM SHELF TOP FC FRIG 635	EA	PWIP	A	4105	$19,413.27	$4.7292
873832	SHELF DOOR LGE M873833 H/S FRIG 635	EA	PWIP	A	31441	$19,413.27	$0.6175
873834	COVER DAIRY M871064 H/S FRIG 635	EA	PWIP	A	29108	$19,413.27	$0.6669
873837	DOOR BUTTER COMP M872611 H/S FRIG	EA	PWIP	A	14956	$19,413.27	$1.2980
873841	WASHER HINGE BEARING 1MM OYST	EA	PWIP	A	292256	$19,413.27	$0.0664
873843	RAIL CROSS HC ASSY OYSTER	EA	WIP	A	8243	$0.00	$0.0000
873844	RAIL CROSS 635 OYSTER	EA	WIP	A	8243	$0.00	$0.0000
873847	CABLE HOLDER HC	EA	PWIP	A	8243	$0.00	$0.0000
873848	CONTROL SLIDE HC FRIG	EA	PWIP	A	1353	$19,413.27	$14.3483
873849	TRAY HC FRIG	EA	PWIP	A	1353	$19,413.27	$14.3483
873852	TRIM SHELF FC FRIG 525	EA	PWIP	A	3421	$0.00	$0.0000
873853	COVER CENTRE RAIL OYSTER 635	EA	PWIP	A	50965	$19,413.27	$0.3809
873855	GASKET ASSY FC C380B OYSTER	EA	WIP	A	19877	$0.00	$0.0000
873856	TRIM BASKET FRONT KELV FC	EA	PWIP	A	73903	$19,413.27	$0.2627
873857	BIN ICE M871129 H/S KELV	EA	PWIP	A	78664	$19,413.27	$0.2468
873859	BIN EGG M871129 H/S KELV	EA	PWIP	A	83446	$19,413.27	$0.2326
873860	KNOB CONTROL ASSY KELV	EA	WIP	A	58564	$19,413.27	$0.3315
873861	KNOB CONTROL KELV/SHACK 635	EA	PWIP	A	69320	$0.00	$0.0000
873862	KNOB LIGHT SWITCH KELV/SHACK 635	EA	PWIP	A	61622	$19,657.73	$0.3190
873864	BIN CRISP 'T' M872607 H/S KELV 635	EA	PWIP	A	55576	$19,413.27	$0.3493
873866	TRIM SHELF PC KELV/SHACK 635	EA	PWIP	A	206026	$19,493.94	$0.0946
873867	SHELF FLAP M873868 H/S KELV	EA	PWIP	A	17519	$19,413.27	$1.1081
873869	TRIM SHELF TOP FC KELV/SHACK 635	EA	PWIP	A	28424	$19,413.27	$0.6830
873870	SHELF DOOR LGE M873871 H/S KELV 635	EA	PWIP	A	117820	$19,413.27	$0.1648
873872	COVER DAIRY M871064 H/S KELV 635	EA	PWIP	A	117128	$19,413.27	$0.1657
873873	BIN CRISP SML HSM872209 WW 525	EA	PWIP	A	144	$19,413.27	$134.8144
873875	CONTROL SLIDE HC KELV/SHACK	EA	PWIP	A	6884	$19,413.27	$2.8201
873876	TRAY HC KELV/SHACK	EA	PWIP	A	6884	$19,413.27	$2.8201
873878	TRIM FC SHELF KELV/SHACK 525	EA	PWIP	A	14151	$19,413.27	$1.3719
873881	DOOR BUTTER COMP M873611 H/S KELV	EA	PWIP	A	32388	$19,413.27	$0.5994
873885	BIN ICE M871129 H/S SHACK	EA	PWIP	A	13214	$19,413.27	$1.4691
873887	KNOB CONTROL ASSY SHACK	EA	PWIP	A	10756	$19,413.27	$1.8049
873888	TRAY MEAT ASSY H/S KELV P190	EA	PWIP	A	247	$19,413.27	$78.5962
873889	TRAY MEAT ASSY H/S FRIG P190	EA	PWIP	A	9	$19,413.27	$2,157.0300
873890	BIN EGG M871129 H/S SHACK	EA	PWIP	A	15553	$19,413.27	$1.2482
873891	TRAY MEAT ASSY H/S SHACK P190	EA	PWIP	A	41	$19,413.27	$473.4944
873892	BIN CRISP 'T' M872607 H/S SHACK 635	EA	PWIP	A	12200	$19,413.27	$1.5913
873895	SHELF DOOR LGE M873896 HS SHACK 635	EA	PWIP	A	16726	$19,413.27	$1.1607
873897	COVER DAIRY M871064 H/S SHACK 635	EA	PWIP	A	21512	$19,413.27	$0.9024
873900	DOOR BUTTER COMP M872611 H/S SHACK	EA	PWIP	A	11978	$19,413.27	$1.6207
873905	BIN CRISP 'B' M872609 H/S FRIG 635	EA	PWIP	A	15826	$19,413.27	$1.2267
873907	BIN CRISP 'B' M872609 H/S KELV 635	EA	PWIP	A	48638	$19,413.27	$0.3991
873909	BIN CRISP 'B' M872609 H/S SHACK 635	EA	PWIP	A	8458	$19,413.27	$2.2953
873993	BLANK BASE PANEL 532+1-1 OYST	EA	STWP	A	52390	$24,840.55	$0.4741
874006	SHELF DOOR LGE M874007 H/S FRIG 525	EA	PWIP	A	16467	$19,413.27	$1.1789
874010	HANDLE DOOR OYSTER	EA	PWIP	A	9788	$19,413.27	$1.9834
874011	TRIM SHELF T.ST FRIG 525	EA	PWIP	A	8124	$19,413.27	$2.3896
874012	BIN CRISP 'T' M872613 H/S FRIG 525	EA	PWIP	A	7793	$19,413.27	$2.4911
874015	TRAY MEAT HSM872226 KELV P120,190	EA	PWIP	A	2883	$19,413.27	$6.7337
874018	DOOR DAIRY M872170 H/S FRIG 525	EA	PWIP	A	6371	$19,413.27	$3.0471
874019	TRAY MEAT HSM872226 FRIG P120,190	EA	PWIP	A	1391	$19,413.27	$13.9563
874020	COVER CENTRE RAIL OYST 525	EA	PWIP	A	16088	$19,413.27	$1.2067
874021	TRIM PC SHELF FRIG 525	EA	PWIP	A	21172	$19,413.27	$0.9169
874022	BIN CRISP 'B' M872209 H/S FRIG 525	EA	PWIP	A	2512	$19,413.27	$7.7282
874023	TRAY MEAT HSM872226 SHACK P120,190	EA	PWIP	A	779	$19,413.27	$24.9208
874024	TRIM SHELF FC FRIG MOULD 525	EA	PWIP	A	15116	$19,413.27	$1.2843
874025	SHELF DOOR LGE M874026 H/S KELV 525	EA	PWIP	A	53985	$19,413.27	$0.3596
874030	TRIM SHELF T.ST KELV 525	EA	PWIP	A	24635	$19,413.27	$0.7880

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SOURCE CODE	FCAST USAGE	TOTAL COSTS	COST PER UNIT
874031	BIN CRISP 'T' M872613 H/S KELV 525	EA	PWIP	A	19392	$19,413.27	$1.0011
874033	DOOR EVAP INNER PANEL FRIG P190	EA	PWIP	A	9	$0.00	$0.0000
874034	DOOR EVAP INNER PANELKELV/SHACK	EA	PWIP	A	190	$244.46	$1.2866
874035	DOOR EVAP OUTER PANEL FRIG P190	EA	PWIP	A	9	$244.46	$27.1622
874036	DOOR EVAP OUTER PANEL KEL/SHA P190	EA	PWIP	A	190	$244.46	$1.2866
874039	TRIM SHELF PC KELV/SHACK 525	EA	PWIP	A	84291	$19,413.27	$0.2303
874040	BIN CRISP 'B' M872209 H/S KELV 525	EA	PWIP	A	6214	$19,413.27	$3.1241
874042	TRIM SHELF FC KELV/SHACK MOULD 525	EA	PWIP	A	51836	$19,413.27	$0.3745
874043	SHELF DOOR LGE M874044 HS SHACK 525	EA	PWIP	A	10478	$19,413.27	$1.8528
874046	DOOR EVAP H/S M874038 P120 FRIG	EA	PWIP	A	1382	$19,413.27	$14.0472
874047	DOOR EVAP H/S M874041 P120 KELV	EA	PWIP	A	2636	$19,413.27	$7.3647
874048	DOOR EVAP H/S M874041 P120 SHACK	EA	PWIP	A	779	$19,413.27	$24.9208
874049	BIN CRISP 'T' M872613 H/S SHACK 525	EA	PWIP	A	1672	$19,413.27	$11.6108
874050	CAP DOOR END OYST 525	EA	PWIP	A	139716	$19,413.27	$0.1389
874052	TRAY MEAT MLD KELV/SHACK P190	EA	PLAS	A	228	$0.00	$0.0000
874053	DOOR DAIRY M872170 H/S KELV 525	EA	PWIP	A	21226	$19,413.27	$0.9146
874054	DOOR DAIRY M872170 H/S SHACK 525	EA	PWIP	A	4543	$19,413.27	$4.2732
874058	BIN CRISP 'B' M872209 H/S SHACK 525	EA	PWIP	A	1423	$19,413.27	$13.6425
874061	NAMEPLATE MOULDED X-RAIL WHITE	EA	PWIP	A	27546	$19,413.27	$0.7048
874063	NAMEPLATE MOULDED X-RAIL OYSTER	EA	PWIP	A	67566	$19,413.27	$0.2873
874065	NAMEPLATE MOULDED S/DR WHITE	EA	PWIP	A	16298	$19,413.27	$1.1911
874067	NAMEPLATE MOULDED S/DR OYSTER	EA	PWIP	A	77672	$19,413.27	$0.2499
874161	LINER PC AS FORMED & TRIMMED	EA	ABVF	A	13056	$19,413.27	$1.4869
874193	GASKET ASSY P120,C170T,240B OYST	EA	PWIP	A	37055	$0.00	$0.0000
874194	GASKET ASSY P/C190,F160,C250T OYST	EA	PWIP	A	16246	$0.00	$0.0000
874195	GASKET ASSY C270,F230	EA	PWIP	A	9864	$0.00	$0.0000
874196	GASKET ASSY TOP FC COMPACT OYST	EA	PWIP	A	17805	$0.00	$0.0000
874227	COMPARTMENT FREEZER BTTM N/F 587DR	EA	WIP	A	5204	$0.00	$0.0000
874283	GASKET EVAP COVER NOTCHED N/F N369B	EA	WIP	A	5204	$0.00	$0.0000
874328	BASE CONTROL BOX HS874327	EA	PWIP	A	94696	$19,413.27	$0.2050
874344	EVAP PLATE ASSY UNPAINTED C380B	EA	WIP	A	53822	$0.00	$0.0000
874345	EVAP PLATE ASSY UNPAINTED C390T	EA		A	12546	$0.00	$0.0000
874346	EVAP PLATE ASSY UNPAINTED C420T	EA	WIP	A	13289	$0.00	$0.0000
874347	EVAP PLATE ASSY UNPAINTED C370	EA	WIP	A	11753	$0.00	$0.0000
874400	CLIP EVAP LINER	EA	PWIP	A	190234	$19,413.27	$0.1020
874401	CLIP EVAP PLATE	EA	PWIP	A	190234	$19,413.27	$0.1020
874402	DUCT DRAIN F/F T-MODELS	EA	PWIP	A	17495	$19,413.27	$1.1096
874403	DUCT DRAIN ELBOW F/F T-MODELS	EA	PWIP	A	17495	$19,413.27	$1.1096
874404	DUCT DRAIN 'Y'	EA	PWIP	A	77622	$19,413.27	$0.2501
874405	DUCT CONTROL BOX	EA	PWIP	A	95117	$19,413.27	$0.2041
874406	COVER EVAPORATOR	EA	PWIP	A	95117	$19,413.27	$0.2041
874408	DUCT DRAIN 'Y' F/F T-MODELS	EA	PWIP	A	17495	$19,413.27	$1.1096
874452	HEATER DEFROST FORMED 230V C380B	EA	WIP	A	55533	$0.00	$0.0000
874453	HEATER DEFROST FORMED 230V C390T	EA	WIP	A	6909	$0.00	$0.0000
874454	HEATER DEFROST FORMED 230V C420T	EA	WIP	A	14999	$0.00	$0.0000
874455	HEATER DEFROST FORMED 230V C370	EA	WIP	A	12708	$0.00	$0.0000
874457	BLANK FC T&S 1078+1-1 525 'T'	EA	WIP	A	17805	$24,840.55	$1.3951
874458	BLANK FC B&B 723+1-1 525 'T'	EA	WIP	A	17805	$24,840.55	$1.3951
874465	LINER DR INNER PC C390T,N375T	EA	ABVF	A	13056	$19,413.27	$1.4869
874473	HEATER DEFROST FORMED 110V C380B	EA	WIP	A	347	$0.00	$0.0000
874474	HEATER DEFROST FORMED 110V C390T	EA	WIP	A	492	$0.00	$0.0000
874475	HEATER DEFROST FORMED 110V C420T	EA	WIP	A	813	$0.00	$0.0000
874476	HEATER DEFROST FORMED 110V C370	EA	WIP	A	37	$0.00	$0.0000
874478	SPACER DEFROST HEATER	EA	PWIP	A	499423	$19,413.27	$0.0389
874489	CONDENSER ASSY 583MM UNPAINTED	EA	SYST	A	3409	$0.00	$0.0000
874492	BLANK WRAPPER 2592+1-1 WHITE	EA	STWP	A	3809	$24,840.55	$6.5215
874505	BLANK BACK 692+1-1MM	EA	STWP	A	3809	$24,840.55	$6.5215
874518	KNOB CONTROL MOULDED VF	EA	PWIP	A	17115	$0.00	$0.0000
874519	KNOB CONTROL HSM874518 VF	EA	PWIP	A	17115	$19,413.27	$1.1343
874588	TUBE SILENCER C229 120X6.35X0.5MM	EA	WIP	A	3809	$0.00	$0.0000
875161	LINER PC AS FORMED & TRIMMED	EA	ABVF	A	41839	$19,413.27	$0.4640
875189	BLANK BACK & BOTTOM 999+1-1MM	EA	STWP	A	19877	$24,840.55	$1.2497
875190	BLANK TOP & SIDES 1592+1-1	EA	STWP	A	19877	$24,840.55	$1.2497
875202	TRIM BOTTOM FREEZER	EA	PWIP	A	91873	$19,413.27	$0.2113
875203	COVER FC TRIM	EA	PWIP	A	91873	$19,413.27	$0.2113
875207	EXTRUSION TRIM FC C380B	LG	EXTR	A	39754	$19,413.27	$0.4883
875471	LINER DR INNER FC C380B	EA	ABVF	A	19877	$19,413.27	$0.9767
876161	LINER PC AS FORMED & TRIMMED	EA	ABVF	A	13549	$19,413.27	$1.4328
876465	LINER DR INNER PC C420T,N405T	EA	ABVF	A	5754	$19,413.27	$3.3739
876467	LINER DR INNER PC C415H,N400H	EA	ABVF	A	7795	$19,413.27	$2.4905
877190	BLANK TOP & SIDES 1792+1-1	EA	STWP	A	21962	$24,840.55	$1.1311
877207	EXTRUSION TRIM FC C410B	LG	EXTR	A	43924	$19,413.27	$0.4420
877471	LINER DR INNER FC C410B,N395B	EA	ABVF	A	21962	$19,413.27	$0.8839
879161	LINER PC FORMED & TRIMMED	EA	ABVF	A	12745	$19,413.27	$1.5232
879465	LINER DR INNER PC C370	EA	ABVF	A	9965	$19,413.27	$1.9481
900502	EXT SHT 3.0X630X 865MM WHITE	SH	ABSH	A	24902	$19,413.27	$0.7796
900503	EXT SHT 3.0X630X1255MM WHITE	SH	ABSH	A	9129	$19,413.27	$2.1265
900504	EXT SHT 3.0X630X1680MM WHITE	SH	ABSH	A	3764	$19,413.27	$5.1576
900507	EXT SHT 3.6X750X1080MM WHITE	SH	ABSH	A	41825	$19,413.27	$0.4642
900508	EXT SHT 3.6X750X1210MM WHITE	SH	ABSH	A	10445	$19,413.27	$1.8586
900509	EXT SHT 3.6X750X1310MM WHITE	SH	ABSH	A	10839	$19,413.27	$1.7911
900510	EXT SHT 3.6X750X1500MM WHITE	SH	ABSH	A	10196	$19,413.27	$1.9040
900512	EXT GASKET OYSTER 1735+15-0	EA	EXTR	A	431503	$19,413.27	$0.0450
900516	EXT SHT 1.5X630X 865MM WHITE	SH	ABSH	A	20072	$19,413.27	$0.9672
900517	EXT SHT 1.5X630X1255MM WHITE	SH	ABSH	A	8520	$19,413.27	$2.2786
900518	EXT SHT 1.5X630X1645MM WHITE	SH	ABSH	A	3764	$19,413.27	$5.1576
900521	EXT SHT 1.5X750X 790MM WHITE	SH	ABSH	A	5846	$19,413.27	$3.3208
900522	EXT SHT 1.5X750X1050MM WHITE	SH	ABSH	A	40955	$19,413.27	$0.4740
900523	EXT SHT 1.5X750X1180MM WHITE	SH	ABSH	A	9792	$19,413.27	$1.9826
900524	EXT SHT 1.5X750X1280MM WHITE	SH	ABSH	A	4603	$19,413.27	$4.2175
900525	EXT SHT 1.5X750X1470MM WHITE	SH	ABSH	A	20201	$19,413.27	$0.9610
900530	EXT SHT 1.1X630X1225MM WHITE	SH	ABSH	A	7507	$19,413.27	$2.5860
900531	EXT SHT 1.1X630X1645MM WHITE	SH	ABSH	A	7237	$19,413.27	$2.6825

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SOURCE CODE	FCAST USAGE	TOTAL COSTS	COST PER UNIT
900532	EXT SHT 1.1X750X 790MM WHITE	SH	ABSH	A	41839	$19,413.27	$0.4640
900533	EXT SHT 1.1X750X1050MM WHITE	SH	ABSH	A	10535	$19,413.27	$1.8427
900536	EXT SHT 1.1X750X1470MM WHITE	SH	ABSH	A	8175	$19,413.27	$2.3747
900539	EXT SHT 1.1X770X1355MM WHITE	SH	ABSH	A	16649	$19,413.27	$1.1660
900540	EXT SHT 1.1X770X1785MM WHITE	SH	ABSH	A	5423	$19,413.27	$3.5798
900613	EXT GASKET OYST 1360MM HF	L	EXTR	A	23552	$19,413.27	$0.8243
900614	EXT GASKET OYST 1540MM HF	LG	EXTR	A	36806	$19,413.27	$0.5274
900615	EXT GASKET OYST 1850MM HF	LG	EXTR	A	26912	$19,413.27	$0.7214
900643	EXTRUSION CAP HF 1950MM OYST	EA	EXTR	A	26982	$19,413.27	$0.7195
900644	EXTRUSION CAP HF 1650MM OYST	EA	EXTR	A	60373	$0.00	$0.0000
901175	BLANK WRAPPER 2174+1-1 WHITE	EA	STWP	A	5065	$24,840.55	$4.9044
901176	BLANK WRAPPER 2950+1-1 WHITE	EA	STWP	A	21194	$24,840.55	$1.1721
901177	BLANK WRAPPER 3726+1-1 WHITE	EA	STWP	A	25882	$24,840.55	$0.9598
904176	BLANK WRAPPER 2950+1-1 F/AVOCADO	EA	STWP	A	263	$0.00	$0.0000
904177	BLANK WRAPPER 3726+1-1 F/AVOCADO	EA	STWP	A	572	$0.00	$0.0000
M1901	PLASTIC ABS CRUSHINGS MULTICOLOUR	KG	POWD	A	38964	$500.24	$0.0128
M1903	PLASTIC ABS CRUSH MONSANTO RL939 WH	KG	PLAS	A	12617	$20,505.75	$1.6252
					21,804,612	$7,739,039.40	

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	STORE 2 COST	STORE 2 TRX	STORE 3 COST	STORE 5 COST	STORE 3&5 TRX	PLASTICS COSTS	PLASTICS TRX	No. 2 PLANT COSTS	No.2 PL TRX	TOTAL COSTS
203353	REINFORCEMENT	EA	PWIP	A	864711						$19,413.27	1	$0.00		$19,413.27
209905	COVER CAPACITOR 26MM 36MM	EA	PWIP	A	4571						$19,413.27	1	$0.00		$19,413.27
313110	TUBE ADAPTOR	EA	SYST	A	15181						$0.00		$0.00		$0.00
402015	FOOT SKID PLASTIC	EA	PWIP	A	105952						$19,413.27	1	$0.00		$19,413.27
402016	PIN-SKID	EA	PWIP	A	105952						$19,413.27	1	$0.00		$19,413.27
805438	TUBE DRAIN DEFROST	EA	PWIP	A	19764						$19,413.27	1	$0.00		$19,413.27
815221	RETAINER GASKET H160,220,360	EA	STWP	A	57236						$0.00		$0.00		$0.00
815222	RETAINER GASKET H510/701	EA	STWP	A	13824						$0.00		$0.00		$0.00
815223	RETAINER GASKET H160	EA	STWP	A	16466						$0.00		$0.00		$0.00
815224	RETAINER GASKET H220	EA	STWP	A	20596						$0.00		$0.00		$0.00
815225	RETAINER GASKET H360	EA	STWP	A	20174						$0.00		$0.00		$0.00
815226	RETAINER GASKET H510	EA	STWP	A	7086						$0.00		$0.00		$0.00
815227	RETAINER GASKET H701	EA	STWP	A	6738						$0.00		$0.00		$0.00
815295	TUBE SUCT,CAP,ACCUM, ASSY H360	EA	WIP	A	2992						$0.00		$0.00		$0.00
815305	BLANK LID 716MM+1-1 WHITE	EA	STWP	A	8233						$0.00		$24,840.55	1	$24,840.55
815306	BLANK LID 851MM+1-1 WHITE	EA	STWP	A	14947						$0.00		$24,840.55	1	$24,840.55
815307	BLANK LID 1216MM+1-1 WHITE	EA	STWP	A	10087						$0.00		$24,840.55	1	$24,840.55
815308	BLANK LID 1456MM+1-1 WHITE	EA	STWP	A	3543						$0.00		$24,840.55	1	$24,840.55
815309	BLANK LID 1886MM+1-1 WHITE	EA	STWP	A	3369						$0.00		$24,840.55	1	$24,840.55
815443	BLANK HF 772MM+1-1 BASE	EA	STWP	A	8233						$0.00		$24,840.55	1	$24,840.55
815444	BLANK HF 906MM+1-1 BASE	EA	STWP	A	14947						$0.00		$24,840.55	1	$24,840.55
815445	BLANK HF 1272MM+1-1 BASE	EA	STWP	A	10122						$0.00		$24,840.55	1	$24,840.55
815446	BLANK HF 1511MM+1-1 BASE	EA	STWP	A	3548						$0.00		$24,840.55	1	$24,840.55
815447	BLANK HF 1941MM+1-1 BASE	EA	STWP	A	3369						$0.00		$24,840.55	1	$24,840.55
815494	TUBE CONDENSER BASE HF160	EA	SYST	A	8233						$0.00		$0.00		$0.00
815495	TUBE CONDENSER BASE HF220	EA	SYST	A	14947						$0.00		$0.00		$0.00
815496	TUBE CONDENSER BASE HF360 RECIP	EA	SYST	A	7130						$0.00		$0.00		$0.00
815497	TUBE CONDENSER BASE HF360 ROTAR	EA	SYST	A	2992						$0.00		$0.00		$0.00
815499	TUBE CONDENSER BASE HF701	EA	SYST	A	3369						$0.00		$0.00		$0.00
815679	RETAINER TORSION BAR	EA	PWIP	A	40179						$19,413.27	1	$0.00		$19,413.27
815687	LID FOAMED STAND WH H360	EA	FASY	A	1867						$0.00		$0.00		$0.00
815688	LID FOAMED STAND WH H510	EA	FASY	A	1752						$0.00		$0.00		$0.00
815689	LID FOAMED STAND WH H701	EA	FASY	A	1648						$0.00		$0.00		$0.00
815700	LID FOAMED DELUXE WH H160	EA	FASY	A	4948						$0.00		$0.00		$0.00
815701	LID FOAMED DELUXE WH H220	EA	FASY	A	8471						$0.00		$0.00		$0.00
815702	LID FOAMED DELUXE WH H360	EA	FASY	A	10076						$0.00		$0.00		$0.00
815704	LID FOAMED DELUXE WH H701	EA	FASY	A	2240						$0.00		$0.00		$0.00
815770	BLANK WRAPPER HF 2508MM+1-1 WHI	EA	STWP	A	8233						$0.00		$24,840.55	1	$24,840.55
815771	BLANK WRAPPER HF 2778MM+1-1 WHI	EA	STWP	A	14947						$0.00		$24,840.55	1	$24,840.55
815772	BLANK WRAPPER HF 3508MM+1-1 WHI	EA	STWP	A	10122						$0.00		$24,840.55	1	$24,840.55
815773	BLANK WRAPPER HF 4121MM+1-1 WHI	EA	STWP	A	3548						$0.00		$24,840.55	1	$24,840.55
815774	BLANK WRAPPER HF 4981MM+1-1 WHI	EA	STWP	A	3369						$0.00		$24,840.55	1	$24,840.55
815780	HANDLE BASKET LIGHT SIERRA	EA	PWIP	A	2856						$0.00		$0.00		$0.00
815796	BLANK BACK & BOTTOM 1206+1-1MM	EA	STWP	A	8233						$0.00		$24,840.55	1	$24,840.55
815797	BLANK BACK & BOTTOM 1340+1-1MM	EA	STWP	A	14947						$0.00		$24,840.55	1	$24,840.55
815798	BLANK BACK & BOTTOM 1705+1-1MM	EA	STWP	A	10122						$0.00		$24,840.55	1	$24,840.55
815799	BLANK BACK & BOTTOM 1945+1-1MM	EA	STWP	A	3548						$0.00		$24,840.55	1	$24,840.55
815800	BLANK BACK & BOTTOM 2374+1-1MM	EA	STWP	A	3369						$0.00		$24,840.55	1	$24,840.55
815801	BLANK HF 1452MM+0.5-0.5 TOP & S	EA	STWP	A	8233						$0.00		$24,840.55	1	$24,840.55
815802	BLANK HF 1722MM+0.5-0.5 TOP & S	EA	STWP	A	14947						$0.00		$24,840.55	1	$24,840.55
815803	BLANK HF 2452MM+0.5-0.5 TOP & S	EA	STWP	A	10122						$0.00		$24,840.55	1	$24,840.55
815804	BLANK HF 3000MM+0.5-0.5 TOP & S	EA	STWP	A	3548						$0.00		$24,840.55	1	$24,840.55
815805	BLANK HF 3860MM+0.5-0.5 TOP & S	EA	STWP	A	3369						$0.00		$24,840.55	1	$24,840.55
815806	LINER LID INNER HF160 STANDARD	EA	ABVF	A	2372						$19,413.27	1	$0.00		$19,413.27

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	STORE 2 COST	STORE 2 TRX	STORE 3 COST	STORE 5 COST	STORE 3&5 TRX	PLASTICS COSTS	PLASTICS TRX	No. 2 PLANT COSTS	No.2 PL TRX	TOTAL COSTS
815807	LINER LID INNER HF220 STANDARD	EA	ABVF	A	5649						$19,413.27	1	$0.00		$19,413.27
815808	LINER LID INNER HF360 STANDARD	EA	ABVF	A	3740						$19,413.27	1	$0.00		$19,413.27
815809	LINER LID INNER HF510 STANDARD	EA	ABVF	A	1699						$19,413.27	1	$0.00		$19,413.27
815810	LINER LID INNER HF701 STANDARD	EA	ABVF	A	2201						$19,413.27	1	$0.00		$19,413.27
815811	LINER LID INNER HF160 DELUXE	EA	ABVF	A	5861						$19,413.27	1	$0.00		$19,413.27
815812	LINER LID INNER HF220 DELUXE	EA	ABVF	A	9298						$19,413.27	1	$0.00		$19,413.27
815813	LINER LID INNER HF360 DELUXE	EA	ABVF	A	6347						$19,413.27	1	$0.00		$19,413.27
815814	LINER LID INNER HF510 DELUXE	EA	ABVF	A	1844						$19,413.27	1	$0.00		$19,413.27
815815	LINER LID INNER HF701 DELUXE	EA	ABVF	A	1168						$19,413.27	1	$0.00		$19,413.27
815831	TUBE CONDENSER BASE HF510	EA	SYST	A	3548						$0.00		$0.00		$0.00
815839	BASKET HF WIDE WHITE	EA	WIRE	A	13853						$0.00		$0.00		$0.00
815840	BASKET HF NARROW WHITE	EA	WIRE	A	55896						$0.00		$0.00		$0.00
815851	TUBE CU 370X6.75 SWG ADA SUC RO	EA	SYST	A	6917						$0.00		$0.00		$0.00
815855	TUBE CONTROL WELL	EA	TUBE	A	40219						$0.00		$0.00		$0.00
815856	TUBE ADAPTOR DISCHARGE	EA	SYST	A	30214						$0.00		$0.00		$0.00
815857	TUBE PROCESS HF	EA	SYST	A	40219						$0.00		$0.00		$0.00
815882	SPACER ABSORPTION BLOCK	EA	PWIP	A	80358						$19,413.27	1	$0.00		$19,413.27
815884	TUBE ADAPTOR ACCUMULATOR	EA	SYST	A	40219						$0.00		$0.00		$0.00
815913	CAP ABSORPTION BLOCK RH	EA	PWIP	A	3543						$0.00		$0.00		$0.00
815919	TUBE ADAPTOR SUCTION ROTARY	EA	SYST	A	3088						$0.00		$0.00		$0.00
816081	CLIP CONDENSER	EA	PWIP	A	605624						$19,413.27	1	$0.00		$19,413.27
816155	WASHER CUP	EA	PWIP	A	17755						$19,413.27	1	$0.00		$19,413.27
817418	SPACER TANK HF	EA	PWIP	A	335972						$19,413.27	1	$0.00		$19,413.27
817427	COVER PCB HF	EA	PWIP	A	24518						$19,413.27	1	$0.00		$19,413.27
817503	TUBE ADAPTOR SUCTION RECIP	EA	SYST	A	30214						$0.00		$0.00		$0.00
817510	TUBE SILENCER HF	EA	SYST	A	37227						$0.00		$0.00		$0.00
817516	TUBE ADAPTOR DISCHARGE	EA	SYST	A	6917						$0.00		$0.00		$0.00
817517	TUBE CU 685X4.75 SWG ADA OIL C	EA	SYST	A	6917						$0.00		$0.00		$0.00
817518	TUBE ADAPTOR OIL COOLER OUT	EA	SYST	A	6917						$0.00		$0.00		$0.00
818034	RETAINER-DRAIN ELBOW	EA	PWIP	A	40219						$19,413.27	1	$0.00		$19,413.27
818101	TUBE ADAPTOR HF TANK	EA	SYST	A	40219						$0.00		$0.00		$0.00
818151	GASKET ASSY H160 OYST	EA	WIP	A	8233						$0.00		$0.00		$0.00
818152	GASKET ASSY H220 OYSTER	EA	WIP	A	14947						$0.00		$0.00		$0.00
818153	GASKET ASSY H360 OYSTER	EA	WIP	A	10087						$0.00		$0.00		$0.00
818154	GASKET ASSY H510 OYSTER	EA	WIP	A	3543						$0.00		$0.00		$0.00
818155	GASKET ASSY H701 OYSTER	EA	WIP	A	3369						$0.00		$0.00		$0.00
818176	DRAIN STOP HF	EA	PWIP	A	40219						$19,413.27	1	$0.00		$19,413.27
818177	COVER COMPRESSOR COMPT H/S OYST	EA	PWIP	A	40219						$19,413.27	1	$0.00		$19,413.27
818179	DRAIN SPOUT HF	EA	PWIP	A	40219						$19,413.27	1	$0.00		$19,413.27
818190	CAP HANDLE PCB OYST HF	EA	PWIP	A	24518						$19,413.27	1	$0.00		$19,413.27
818198	CAP ABSORPTION BLOCK RH	EA	PWIP	A	40179						$19,413.27	1	$0.00		$19,413.27
818199	CAP ABSORPTION BLOCK LH	EA	PWIP	A	36636						$19,413.27	1	$0.00		$19,413.27
818203	HANDLE BASKET FRIG HF C'GREEN	EA	PWIP	A	20996						$19,413.27	1	$0.00		$19,413.27
818204	HANDLE BASKET KELV HF PURPLE	EA	PWIP	A	87310						$19,413.27	1	$0.00		$19,413.27
818205	HANDLE BASKET SHACK HF WHITE	EA	PWIP	A	42348						$19,413.27	1	$0.00		$19,413.27
818207	RETAINER LOCK HF OYST	EA	PWIP	A	17755						$19,413.27	1	$0.00		$19,413.27
818208	PCB PANEL HF OYST	EA	PWIP	A	16400	$51.16	1				$19,413.27	1	$0.00		$19,464.43
818209	KNOB THERMOSTAT HF OYST	EA	PWIP	A	40219						$19,413.27	1	$0.00		$19,413.27
850027	GROMMET INJECTION MOULDED	EA	PWIP	A	15958						$19,413.27	1	$0.00		$19,413.27
850075	DUCT HARNESS	EA	PWIP	A	44056						$19,413.27	1	$0.00		$19,413.27
850118	BLANK BACK PANEL 534+0.5-0.5	EA	STWP	A	5065						$0.00		$24,840.55	1	$24,840.55
850119	BLANK UNIT COMPARTMENT 495+1.5-	EA	STWP	A	52976						$0.00		$24,840.55	1	$24,840.55
850265	PIN COMPRESSOR MNTG	EA	PWIP	A	746008						$19,413.27	1	$0.00		$19,413.27
850291	PANEL BACK EVAP P120	EA	PWIP	A	4882						$19,413.27	1	$0.00		$19,413.27

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	STORE 2 COST	STORE 2 TRX	STORE 3 COST	STORE 5 COST	STORE 3&5 TRX	PLASTICS COSTS	PLASTICS TRX	No. 2 PLANT COSTS	No.2 PL TRX	TOTAL COSTS
850292	BRACKET EVAP SUPPT P110	EA	PWIP	A	4882						$19,413.27	1	$0.00		$19,413.27
850332	COVER CONTROL BOX P800	EA	PWIP	A	44056						$19,413.27	1	$0.00		$19,413.27
850333	BASE CONTROL BOX	EA	PWIP	A	44056						$19,413.27	1	$0.00		$19,413.27
850334	SWITCH ROCKER LIGHT	EA	PWIP	A	44056						$19,413.27	1	$0.00		$19,413.27
850340	COVER CONTROL WIRING P800	EA	PWIP	A	44056						$19,413.27	1	$0.00		$19,413.27
850346	KNOB - CONTROL	EA	PWIP	A	38773						$19,413.27	1	$0.00		$19,413.27
850349	PLATE DIAL MOULDED 853352	EA	PWIP	A	42000						$0.00		$0.00		$0.00
850360	BASE TERMINAL BLOCK	EA	PWIP	A	196507						$19,413.27	1	$0.00		$19,413.27
850361	LID TERMINAL BLOCK	EA	PWIP	A	179392						$19,413.27	1	$0.00		$19,413.27
850473	RETAINER GASKET ENDS	EA	STWP	A	137910						$0.00		$0.00		$0.00
850749	TRAY ICE CUBE	EA	PWIP	A	257910						$19,413.27	1	$0.00		$19,413.27
850801	SPACER CONDENSER STOP	EA	PWIP	A	312576						$19,413.27	1	$0.00		$19,413.27
851152	DUCT DRAIN BOTTOM	EA	PWIP	A	10779						$0.00		$0.00		$0.00
851302	COVER EVAP PLATE	EA	PWIP	A	28098						$19,413.27	1	$0.00		$19,413.27
851387	PLATE DEFROST HEATER	EA	PWIP	A	38877						$19,413.27	1	$0.00		$19,413.27
851655	COVER DRAIN TUBE 851800	EA	PWIP	A	28584						$19,413.27	1	$0.00		$19,413.27
851800	COVER DRAIN TUBE MOULDED	EA	PWIP	A	32000						$0.00		$0.00		$0.00
852045	SHELF FC BTTM WHITE 525	EA	WIRE	A	65958			$98.23	$146.23	1	$0.00		$0.00		$244.46
852205	TRIM V.F TOP	EA	PWIP	A	8920						$19,413.27	1	$0.00		$19,413.27
852206	TRIM V.F & F.C BOTTOM	EA	PWIP	A	19213						$19,413.27	1	$0.00		$19,413.27
852400	LID CONTROL BOX	EA	PWIP	A	17115						$19,413.27	1	$0.00		$19,413.27
852704	BASKET FORMED FC	EA	WIRE	A	19213						$0.00		$0.00		$0.00
853118	BLANK BACK PANEL 922.5X0.4	EA	STPP	A	21160						$0.00		$24,840.55	1	$24,840.55
853287	SPACER-EVAP.	EA	PWIP	A	297						$19,413.27	1	$0.00		$19,413.27
853291	PIN HINGE DOOR EVAPORATOR	EA	PWIP	A	297						$19,413.27	1	$0.00		$19,413.27
853352	PLATE CTRL DIAL H/S850349	EA	PWIP	A	40455						$19,413.27	1	$0.00		$19,413.27
853761	TRAY CHILL BASE	EA	PWIP	A	228			$98.23	$146.23	1	$0.00		$0.00		$244.46
853762	TRAY CHILL FLAP	EA	PWIP	A	228						$0.00		$0.00		$0.00
855207	TRIM VF 1029MM	LG	EXTR	A	8148						$19,413.27	1	$0.00		$19,413.27
855214	BLANK TOP & SIDES 2562+1-1	EA	STWP	A	4074						$0.00		$24,840.55	1	$24,840.55
855219	BLANK BACK & BOTTOM 1449+1-1MM	EA	STWP	A	4074						$0.00		$24,840.55	1	$24,840.55
855241	TUBE CONTROL WELL	EA	WIP	A	8920						$0.00		$0.00		$0.00
856177	TUBE TRANSFER EVAP FC/EVAP PC	EA	WIP	A	17805						$0.00		$0.00		$0.00
856202	TRIM FC TANK	EA	PWIP	A	17805						$19,413.27	1	$0.00		$19,413.27
856310	TUBE SUCTION & CAP ASSY C170T	EA	SYST	A	11508						$0.00		$0.00		$0.00
856311	TUBE SUCTION & CAPILLARY LINE A	EA	WIP	A	10293						$0.00		$0.00		$0.00
856336	COVER LAMP P800	EA	PWIP	A	44056						$19,413.27	1	$0.00		$19,413.27
857118	BLANK BACK PANEL 1310.5+1-1	EA	STWP	A	26454						$0.00		$24,840.55	1	$24,840.55
857472	RETAINER GASKET SIDES	EA	STWP	A	19728						$0.00		$0.00		$0.00
859207	TRIM VF 1417MM	LG	EXTR	A	9692						$19,413.27	1	$0.00		$19,413.27
859214	BLANK TOP & SIDES 3338+1-1	EA	STWP	A	4846						$0.00		$24,840.55	1	$24,840.55
859219	BLANK BACK & BOTTOM 1837+1-1MM	EA	STWP	A	4846						$0.00		$24,840.55	1	$24,840.55
861177	TUBE TRANSFER EVAP FC/EVAP P.C.	EA	WIP	A	10293						$0.00		$0.00		$0.00
861201	TRIM FC TOP	EA	PWIP	A	10293						$19,413.27	1	$0.00		$19,413.27
861207	TRIM VF 654MM	LG	EXTR	A	20586						$19,413.27	1	$0.00		$19,413.27
861223	BLANK BACK & BOTTOM 1117+1-1MM	EA	STWP	A	10293						$0.00		$24,840.55	1	$24,840.55
861225	BLANK TOP & SIDES 1898+1-1	EA	STWP	A	10293						$0.00		$24,840.55	1	$24,840.55
861310	TUBE SUCTION & CAP ASSY C250T	EA	SYST	A	6297						$0.00		$0.00		$0.00
871011	TRIM CONTROL KNOB RED SHACK	EA	PWIP	A	12654						$0.00		$0.00		$0.00
871012	TRIM CONTROL KNOB WHITE KELV	EA	PWIP	A	64364						$0.00		$0.00		$0.00
871013	TRIM CONTROL KNOB BLUE FRIG	EA	PWIP	A	19249						$0.00		$0.00		$0.00
871014	TUBE TRANSFER 635 T-MODELS	EA	SYST	A	49974						$0.00		$0.00		$0.00
871023	BLANK BASE PANEL 642+1-1	EA	STWP	A	308						$0.00		$0.00		$0.00
871024	BLANK UNIT COMPARTMENT 607+1-1	EA	STWP	A	102520						$0.00		$24,840.55	1	$24,840.55

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	STORE 2 COST	STORE 2 TRX	STORE 3 COST	STORE 5 COST	STORE 3&5 TRX	PLASTICS COSTS	PLASTICS TRX	No. 2 PLANT COSTS	No.2 PL TRX	TOTAL COSTS
871027	BLANK BACK 1410.5+1-1MM	EA	STWP	A	40715						$0.00		$24,840.55	1	$24,840.55
871033	CAM CONT. BOX 635	EA	PWIP	A	94696						$19,413.27	1	$0.00		$19,413.27
871034	COVER CONTROL BOX TOP 635	EA	PWIP	A	94696						$19,413.27	1	$0.00		$19,413.27
871118	KNOB CONTROL SHACK L.SIERRA	EA	PWIP	A	4000						$0.00		$0.00		$0.00
871125	COVER BUTTER TRAY ALL BRANDS	EA	PWIP	A	21034						$19,413.27	1	$0.00		$19,413.27
871171	BRACKET SHELF SUPPORT FC LONG	EA	PWIP	A	249306						$19,413.27	1	$0.00		$19,413.27
871174	WASHER EVAP COVER	EA	PWIP	A	186295						$19,413.27	1	$0.00		$19,413.27
871175	COVER EVAP SCREWS	EA	PWIP	A	149036						$19,413.27	1	$0.00		$19,413.27
871191	SPACER TUBE	EA	PWIP	A	985953						$19,413.27	1	$0.00		$19,413.27
871193	KNOB CONTROL ASSY SHACK	EA	PWIP	A	40						$0.00		$0.00		$0.00
871222	SHELF FC TOP NO FROST WHITE	EA	WIRE	A	17489						$0.00		$0.00		$0.00
871232	EXTRUSION CROSS RAIL	LG	EXTR	A	10535						$0.00		$0.00		$0.00
871233	BIN HC	EA	PWIP	A	10535						$19,413.27	1	$0.00		$19,413.27
871234	TUBE TRANSFER BTTM FC	EA	WIP	A	22075						$0.00		$0.00		$0.00
871307	BLANK BACK 1310.5+1-1MM	EA	STWP	A	27729						$0.00		$24,840.55	1	$24,840.55
871308	BLANK BACK 1140.5+1-1MM	EA	STWP	A	31059						$0.00		$24,840.55	1	$24,840.55
871320	SHELF TOP FC WHITE	EA	WIRE	A	19229						$0.00		$0.00		$0.00
871325	COVER FINISHED HC H/S	EA	PWIP	A	8728						$19,413.27	1	$0.00		$19,413.27
871344	TUBE CU 147X6.35 PLAIN	EA	WIP	A	133440						$0.00		$0.00		$0.00
871384	SHELF FC TOP NO FROST BASE WHIT	EA	WIRE	A	17489						$0.00		$0.00		$0.00
871396	BLANK BACK & BOTTOM 1099+1-1MM	EA	STWP	A	21962						$0.00		$24,840.55	1	$24,840.55
871397	BLANK BACK & BOTTOM 856+1-1MM	EA	STWP	A	36724						$0.00		$24,840.55	1	$24,840.55
871398	BLANK TOP & SIDES 1274+1-1	EA	STWP	A	36724						$0.00		$24,840.55	1	$24,840.55
871415	BLANK WRAPPER 3492+1-1 WHITE	EA	STWP	A	29587						$0.00		$24,840.55	1	$24,840.55
871416	BLANK WRAPPER 3836+1-1 WHITE	EA	STWP	A	31143						$0.00		$24,840.55	1	$24,840.55
871417	BLANK WRAPPER 4035+1-1 WHITE	EA	STWP	A	31397						$0.00		$24,840.55	1	$24,840.55
871419	BLANK WRAPPER 3492+1-1 ALMOND	EA	STWP	A	270						$0.00		$24,840.55	1	$24,840.55
871420	BLANK WRAPPER 3836+1-1 ALMOND	EA	STWP	A	579						$0.00		$24,840.55	1	$24,840.55
871421	BLANK WRAPPER 4035+1-1 ALMOND	EA	STWP	A	1657						$0.00		$24,840.55	1	$24,840.55
871456	GROMMET EVAP TUBES	EA	PWIP	A	514502						$19,413.27	1	$0.00		$19,413.27
871459	REINFORCEMENT SMALL HC	EA	PWIP	A	52588						$19,413.27	1	$0.00		$19,413.27
871466	LINER DR INNER HC	EA	ABVF	A	10535						$19,413.27	1	$0.00		$19,413.27
871644	CLIP DUCT	EA	PWIP	A	285351						$19,413.27	1	$0.00		$19,413.27
871654	PARTITION PLASTICISED HC	EA	WIRE	A	10535						$0.00		$0.00		$0.00
871855	PLUG HINGE PIN HOLE SIERRA	EA	PWIP	A	21313						$0.00		$0.00		$0.00
871856	WASHER HINGE BEARING 1MM	EA	PWIP	A	2819						$0.00		$0.00		$0.00
871861	BRACKET BOTTOM HINGE LH SIERRA	EA	PWIP	A	297						$0.00		$0.00		$0.00
871862	BRACKET BOTTOM HINGE RH SIERRA	EA	PWIP	A	10446						$0.00		$0.00		$0.00
871896	LINER BUTTER COMPT H/S 871078	EA	PWIP	A	65400						$19,413.27	1	$0.00		$19,413.27
871897	TUBE CONTROL WELL 635 VF	EA	WIP	A	8195						$0.00		$0.00		$0.00
871995	EXTRUSION CABLE HOLDER	EA	EXTR	A	20278						$0.00		$0.00		$0.00
872081	SHELF FC TOP WHITE 525	EA	WIRE	A	17805						$0.00		$0.00		$0.00
872170	DOOR DIARY MOULD ALL BRANDS 525	EA	PWIP	A	30						$0.00		$0.00		$0.00
872178	SHELF DOOR LGE HSM872175FRIG	EA	PWIP	A	90						$0.00		$0.00		$0.00
872189	BLANK BACK & BOTTOM 1740+1-1MM2	EA	STWP	A	8195						$0.00		$24,840.55	1	$24,840.55
872190	BLANK TOP & SIDES 3072+1-1	EA	STWP	A	8195						$0.00		$24,840.55	1	$24,840.55
872202	TRIM VF TOP	EA	PWIP	A	8195						$19,413.27	1	$0.00		$19,413.27
872208	EXTRUSION TRIM FC F310	LG	EXTR	A	16390						$19,413.27	1	$0.00		$19,413.27
872244	SHELF PC WHITE	EA	WIRE	A	97922						$0.00		$0.00		$0.00
872247	SHELF TALL STORAGE WHITE	EA	WIRE	A	23408						$0.00		$0.00		$0.00
872255	LINER DR INNER PC P,C120,170T,2	EA	ABVF	A	26762						$19,413.27	1	$0.00		$19,413.27
872256	LINER DR INNER PC P,C190,250T	EA	ABVF	A	12172						$19,413.27	1	$0.00		$19,413.27
872257	LINER DR INNER PC C270	EA	ABVF	A	5018						$19,413.27	1	$0.00		$19,413.27
872258	LINER DR INNER FC C170T,250	EA	ABVF	A	17805						$19,413.27	1	$0.00		$19,413.27

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	STORE 2 COST	STORE 2 TRX	STORE 3 COST	STORE 5 COST	STORE 3&5 TRX	PLASTICS COSTS	PLASTICS TRX	No. 2 PLANT COSTS	No.2 PL TRX	TOTAL COSTS
872259	LINER DR INNER FC C240B	EA	ABVF	A	10293						$19,413.27	1	$0.00		$19,413.27
872260	LINER DR INNER FC F160	EA	ABVF	A	4074						$19,413.27	1	$0.00		$19,413.27
872261	LINER DR INNER FC F230	EA	ABVF	A	4846						$19,413.27	1	$0.00		$19,413.27
872280	SHELF PC WHITE	EA	WIRE	A	10358						$0.00		$0.00		$0.00
872287	PANEL SIDE EVAP	EA	PWIP	A	594						$19,413.27	1	$0.00		$19,413.27
872314	TUBE SILENCER	EA	SYST	A	74293						$0.00		$0.00		$0.00
872326	RETAINER GASKET SIDE 749.2MM	EA	STWP	A	98140						$0.00		$0.00		$0.00
872329	RETAINER GASKET SIDE 1137MM	EA	STWP	A	8462						$0.00		$0.00		$0.00
872332	RETAINER GASKET SIDE 361.2MM	EA	STWP	A	35610						$0.00		$0.00		$0.00
872447	KNOB LIGHT SWITCH SHACK	EA	PWIP	A	40						$0.00		$0.00		$0.00
872462	TUBE COMPRESSOR DISCHARGE	EA	SYST	A	8195						$0.00		$0.00		$0.00
872468	TUBE ADAPTOR SUCTION	EA	TUBE	A	93860						$0.00		$0.00		$0.00
872472	LINER DR INNER FC F310	EA	ABVF	A	8175						$19,413.27	1	$0.00		$19,413.27
872519	TUBE TRANSFER N395B	EA	SYST	A	19764						$0.00		$0.00		$0.00
872529	DRAIN OUTLET	EA	PWIP	A	10293						$19,413.27	1	$0.00		$19,413.27
872530	DRAIN OUTLET ELBOW	EA	PWIP	A	10293						$19,413.27	1	$0.00		$19,413.27
872557	GROMMET DUCT	EA	PWIP	A	411123						$19,413.27	1	$0.00		$19,413.27
872561	DUCT HARNESS HC	EA	PWIP	A	44099						$19,413.27	1	$0.00		$19,413.27
872581	TUBE TRANSFER 635 'T' F/F MODEL	EA	SYST	A	17495						$0.00		$0.00		$0.00
872633	BASKET FC DOOR WHITE	EA	WIRE	A	36718						$0.00		$0.00		$0.00
872677	NAMEPLATE MOULDED SHACK LOCAL	EA	PWIP	A	2000						$0.00		$0.00		$0.00
872678	NAMEPLATE SHACK HSM872677 LOCAL	EA	PWIP	A	1085						$0.00		$0.00		$0.00
872689	EVAP PLATE & TAIL ASSY UNPAINTE	EA	SYST	A	21221						$0.00		$0.00		$0.00
872690	EVAP & SUCTION LINE ASSY UNPAIN	EA	SYST	A	4631						$0.00		$0.00		$0.00
872693	CONDENSER ASSY UNPAINTED	EA	SYST	A	20800						$0.00		$0.00		$0.00
872694	CONDENSER ASSY UNPAINTED	EA	SYST	A	25000						$0.00		$0.00		$0.00
872697	CONDENSER ASSY 994MM UNPAINTED	EA	SYST	A	30159						$0.00		$0.00		$0.00
872701	BLANK DOOR WRAP 345+1-1 WHITE	EA	STWP	A	16970						$0.00		$24,840.55	1	$24,840.55
872702	BLANK DOOR WRAP 405+1-1 WHITE	EA	STWP	A	41280						$0.00		$24,840.55	1	$24,840.55
872703	BLANK DOOR WRAP 575+1-1 WHITE	EA	STWP	A	18719						$0.00		$24,840.55	1	$24,840.55
872704	BLANK DOOR WRAP 675+1-1 WHITE	EA	STWP	A	20736						$0.00		$24,840.55	1	$24,840.55
872705	BLANK DOOR WRAP 709+1-1 WHITE	EA	STWP	A	6029						$0.00		$24,840.55	1	$24,840.55
872706	BLANK DOOR WRAP 733+1-1 WHITE	EA	STWP	A	36792						$0.00		$24,840.55	1	$24,840.55
872707	BLANK DOOR WRAP 893+1-1 WHITE	EA	STWP	A	55430						$0.00		$24,840.55	1	$24,840.55
872708	BLANK DOOR WRAP 1063+1-1 WHITE	EA	STWP	A	12424						$0.00		$24,840.55	1	$24,840.55
872709	BLANK DOOR WRAP 1121+1-1 WHITE	EA	STWP	A	15674						$0.00		$24,840.55	1	$24,840.55
872710	BLANK DOOR WRAP 1163+1-1 WHITE	EA	STWP	A	4632						$0.00		$24,840.55	1	$24,840.55
872711	BLANK DOOR WRAP 1345+1-1 WHITE	EA	STWP	A	17361						$0.00		$24,840.55	1	$24,840.55
872712	BLANK DOOR WRAP 1513+1-1 WHITE	EA	STWP	A	9864						$0.00		$24,840.55	1	$24,840.55
872715	BLANK DOOR WRAP 405+1-1 ALMOND	EA	STWP	A	3096						$0.00		$24,840.55	1	$24,840.55
872717	BLANK DOOR WRAP 675+1-1 ALMOND	EA	STWP	A	338						$0.00		$0.00		$0.00
872718	BLANK DOOR WRAP 709+1-1 ALMOND	EA	STWP	A	933						$0.00		$0.00		$0.00
872720	BLANK DOOR WRAP 893+1-1 ALMOND	EA	STWP	A	603						$0.00		$0.00		$0.00
872721	BLANK DOOR WRAP 1063+1-1 ALMOND	EA	STWP	A	579						$0.00		$0.00		$0.00
872723	BLANK DOOR WRAP 1163+1-1 ALMOND	EA	STWP	A	386						$0.00		$0.00		$0.00
872724	BLANK DOOR WRAP 1345+1-1 ALMOND	EA	STWP	A	5						$0.00		$0.00		$0.00
872727	BLANK DOOR WRAP 345+1-1 F/A	EA	STWP	A	835						$0.00		$0.00		$0.00
872732	BLANK DOOR WRAP 733+1-1 F/A	EA	STWP	A	263						$0.00		$0.00		$0.00
872735	BLANK DOOR WRAP 1121+1-1 F/A	EA	STWP	A	572						$0.00		$0.00		$0.00
872753	BLANK DOUBLE DOOR 690+1-1 WHIT	EA	STWP	A	8000						$0.00		$24,840.55	1	$24,840.55
872754	BLANK DOUBLE DOOR 810+1-1 WHIT	EA	STWP	A	19750						$0.00		$24,840.55	1	$24,840.55
872756	BLANK DOUBLE DOOR 810+1-1 ALMO	EA	STWP	A	1625						$0.00		$24,840.50	1	$24,840.50
872757	BLANK DOUBLE DOOR 690+1-1 F/A	EA	STWP	A	318						$0.00		$0.00		$0.00
872762	SPACER EVAPORATOR 20MM	EA	PWIP	A	8378						$0.00		$0.00		$0.00

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	STORE 2 COST	STORE 2 TRX	STORE 3 COST	STORE 5 COST	STORE 3&5 TRX	PLASTICS COSTS	PLASTICS TRX	No. 2 PLANT COSTS	No.2 PL TRX	TOTAL COSTS
872765	TUBE SILENCER BTTM FC	EA	WIP	A	32368						$0.00		$0.00		$0.00
872785	KNOB PUSH BUTTON	EA	PWIP	A	6085						$0.00		$0.00		$0.00
872786	BUTTON DEFROST CONTROL	EA	PWIP	A	6000						$0.00		$0.00		$0.00
872787	KNOB CONTROL ASSY "COMPACT SERI	EA	WIP	A	5198						$19,413.27	1	$0.00		$19,413.27
872796	TUBE 425MMX3/16 SWAGE ADA COND.	EA	SYST	A	4530						$0.00		$0.00		$0.00
872797	TUBE ADAPTOR OIL COOL/COND	EA	SYST	A	55194						$0.00		$0.00		$0.00
872798	TUBE ADAPTOR 300X4.75 SWG 190,C	EA	SYST	A	13838						$0.00		$0.00		$0.00
872806	LINER PC FORMED & TRIMMED 120,1	EA	ABVF	A	16573						$19,413.27	1	$0.00		$19,413.27
872807	LINER PC FORMED & TRIMMED C240B	EA	ABVF	A	10293						$19,413.27	1	$0.00		$19,413.27
872808	LINER PC FORMED & TRIMMED 190,2	EA	ABVF	A	12172						$19,413.27	1	$0.00		$19,413.27
872809	LINER PC FORMED & TRIMMED C270	EA	ABVF	A	5018						$19,413.27	1	$0.00		$19,413.27
872849	PLATE REINFORCEMENT	EA	PLAS	A	95117						$19,413.27	1	$0.00		$19,413.27
872866	HEATER ASSY HC (110V)	EA	WIP	A	472						$0.00		$0.00		$0.00
872920	SUCTION & CAPILLARY ASSY C365H	EA	SYST	A	2740						$0.00		$0.00		$0.00
872921	SUCTION & CAPILLARY ASSY C335T	EA	SYST	A	13928						$0.00		$0.00		$0.00
872922	SUCTION & CAPILLARY ASSY C390T	EA	SYST	A	13056						$0.00		$0.00		$0.00
872923	SUCTION & CAPILLARY ASSY C420T	EA	SYST	A	13549						$0.00		$0.00		$0.00
872924	SUCTION & CAPILLARY ASSY C380B	EA	SYST	A	14673						$0.00		$0.00		$0.00
872925	SUCTION & CAPILLARY ASSY C410B,	EA	SYST	A	27166						$0.00		$0.00		$0.00
872926	SUCTION & CAPILLARY ASSY C370	EA	SYST	A	10005						$0.00		$0.00		$0.00
872931	HEATER ASSY 100-115V SHORT 635	EA	WIP	A	495						$0.00		$0.00		$0.00
873031	COVER BUTTER COMPARTMENT	EA	PWIP	A	65400						$19,413.27	1	$0.00		$19,413.27
873161	LINER PC AS FORMED & TRIMMED	EA	ABVF	A	13928						$19,414.16	1	$0.00		$19,414.16
873185	CONDENSER ASSY UNPAINTED P/C120	EA	SYST	A	5065						$0.00		$0.00		$0.00
					11941313	$51.16	1	$196.46	$292.46	2	$1,941,327.89	100	$1,639,476.25	66	$3,581,344.22
Appendix No. 3	Source Code A - 2										$3,533,215.14	182	$621,013.75	25	
Appendix No. 15	Source Code P - 1										$19,413.27	1			
Appendix No. 16	Source Code P - 2														
Appendix No. 4	Source Code F														
Appendix No. 17	Source Code R										$194,132.70	10			
CHECK BALANCES								$196.46	$292.46	2	$5,688,089.00	293	$2,260,490.00	91	$3,581,344.22

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	STORE 2 COST	STORE 2 TRX	STORE 4 COST	STORE 4 TRX	STORE 3 COST	STORE 5 COST	STORE 3&5 TRX	PLASTICS COST	PLASTICS TRX	No. 2 PLANT COST	No. 2 PL TRX	TOTAL COSTS
873202	TRIM FC TOP FREEZER	EA	PWIP	A	36724			$161.35	2				$19,413.27	1	$0.00		$19,574.62
873203	SHELF HALF FRONT WHITE	EA	WIRE	A	95296								$0.00		$0.00		$0.00
873205	SHELF HALF REAR WHITE	EA	WIRE	A	95296								$0.00		$0.00		$0.00
873220	TUBE SUCTION & ACCUMULATOR	EA	WIP	A	8920								$0.00		$0.00		$0.00
873221	TUBE & ACCUM ASSY F310	EA	WIP	A	8195								$0.00		$0.00		$0.00
873228	TRAY WATER OVERFLOW	EA	PWIP	A	5839								$19,413.27	1	$0.00		$19,413.27
873229	TRAY WATER OVERFLOW ASSY	EA	WIP	A	5839								$0.00		$0.00		$0.00
873230	CAP INSULATION	EA	PWIP	A	64220								$19,413.27	1	$0.00		$19,413.27
873259	TUBE WATER OVERFLOW TRAY	EA	SYST	A	5839	$306.94	6			$98.23	$146.23	1	$0.00		$0.00		$551.40
873267	EVAP FROST FREE AS FORMED	EA	WIP	A	32055								$0.00		$0.00		$0.00
873315	TRIM SHELF PC WH/WH 635	EA	EXTR	A	23969								$19,413.27	1	$0.00		$19,413.27
873343	COVER DAIRY HS F&P 635	EA	PWIP	A	15052								$19,413.27	1	$0.00		$19,413.27
873347	BIN CRISP 'B' HS F&P 635	EA	PWIP	A	11206								$19,413.27	1	$0.00		$19,413.27
873352	BIN CRISP 'T' HS F&P 635	EA	PWIP	A	6753								$19,413.27	1	$0.00		$19,413.27
873393	EVAP PLATE PIERCED C120	EA	COOL	A	107								$0.00		$0.00		$0.00
873405	CONDENSER ASSY SPLIT UNPAI	EA	SYST	A	21923								$0.00		$0.00		$0.00
873411	CONDENSER ASSY 1298MM UNPA	EA	SYST	A	45254								$0.00		$0.00		$0.00
873413	SHELF PC 635 WHITE	EA	WIRE	A	194259								$0.00		$0.00		$0.00
873443	BLANK BASE PANEL 532+1-1 W	EA	STPP	A	586								$0.00		$24,840.55	1	$24,840.55
873446	DUCT SATCHET ASSY 635	EA	MISC	A	18804								$0.00		$0.00		$0.00
873449	CAP DOOR END WW 525	EA	PWIP	A	1926								$19,413.27	1	$0.00		$19,413.27
873450	LINER DR INNER FC 635 TOP	EA	ABVF	A	36724								$19,413.27	1	$0.00		$19,413.27
873457	TRIM SHELF FC 525 WW	EA	PWIP	A	564								$19,413.27	1	$0.00		$19,413.27
873458	REINFORCEMENT LARGE	EA	PWIP	A	52588								$19,413.27	1	$0.00		$19,413.27
873465	LINER DR INNER PC C365,335	EA	ABVF	A	58507								$19,413.27	1	$0.00		$19,413.27
873468	TUBE ADAPTOR SUCTION	EA	SYST	A	3719								$0.00		$0.00		$0.00
873469	SHELF DOOR LGE HSM873827 W	EA	PWIP	A	752								$19,413.27	1	$0.00		$19,413.27
873470	TRIM PC SHELF 525 WW	EA	PWIP	A	1213								$19,413.27	1	$0.00		$19,413.27
873473	KNOB CONTROL ASSY P120	EA	WIP	A	85								$19,413.27	1	$0.00		$19,413.27
873474	BUTTON DEFROST CONTROL OYS	EA	PWIP	A	85								$19,413.27	1	$0.00		$19,413.27
873475	DOOR EVAP HSM873835 WW P12	EA	PWIP	A	85								$19,413.27	1	$0.00		$19,413.27
873476	MEAT TRAY HSM872226 WW P12	EA	PWIP	A	85								$19,413.27	1	$0.00		$19,413.27
873477	TRIM SHELF T.ST WW 525	EA	PWIP	A	331								$19,413.27	1	$0.00		$19,413.27
873478	BIN CRISP LGE HSM872613 52	EA	PWIP	A	311								$19,413.27	1	$0.00		$19,413.27
873479	COVER CENTRE RAIL 525 WW	EA	PWIP	A	6310								$19,413.27	1	$0.00		$19,413.27
873480	BLANK BASE PANEL 642+1-1 W	EA	STWP	A	10917								$0.00		$24,840.55	1	$24,840.55
873481	BRACKET BOTTOM HINGE LH WH	EA	PWIP	A	11811								$19,413.27	1	$0.00		$19,413.27
873482	BRACKET BOTTOM HINGE RH WH	EA	PWIP	A	11811								$19,413.27	1	$0.00		$19,413.27
873483	PLUG HINGE PIN HOLE WH/WH	EA	PWIP	A	12397								$19,413.27	1	$0.00		$19,413.27
873484	WASHER HINGE BEARING 1MM W	EA	PWIP	A	26264								$19,413.27	1	$0.00		$19,413.27
873486	RAIL CENTRE 635 WH/WH	EA	WIP	A	2292								$0.00		$0.00		$0.00
873488	COVER HINGE TOP BRACKET WH	EA	PWIP	A	11811								$19,413.27	1	$0.00		$19,413.27
873489	CAP DOOR END 635 WH/WH	EA	PWIP	A	46618								$19,413.27	1	$0.00		$19,413.27
873490	PLUG DOOR END CAP WH/WH	EA	PWIP	A	48544								$19,413.27	1	$0.00		$19,413.27
873492	TRIM CONTROL KNOB OYSTER	EA	PWIP	A	10727								$0.00		$0.00		$0.00
873494	KNOB CONTROL ASSY F&P WH/W	EA	PWIP	A	10727								$0.00		$0.00		$0.00
873495	KNOB CONTROL F&P WH/WH	EA	PWIP	A	10727								$19,413.27	1	$0.00		$19,413.27
873496	KNOB LIGHT SWITCH F&P WH/W	EA	PWIP	A	10727								$19,413.27	1	$0.00		$19,413.27
873497	BIN EGG H/S F&P DIAMOND	EA	PWIP	A	9092								$19,413.27	1	$0.00		$19,413.27
873498	TRAY BUTTER F&P WH/WH	EA	PWIP	A	59322								$19,413.27	1	$0.00		$19,413.27
873499	BIN ICE H/S F&P DIAMOND	EA	PWIP	A	10713								$19,413.27	1	$0.00		$19,413.27
873501	CONTROL SLIDE HC WH/WH	EA	PWIP	A	2292	$102.31	2						$19,413.27	1	$0.00		$19,515.58
873502	TRAY HC WH/WH	EA	PWIP	A	2292								$19,413.27	1	$0.00		$19,413.27
873504	SHELF FLAP H/S WH/WH	EA	PWIP	A	331								$19,413.27	1	$0.00		$19,413.27

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	STORE 2 COST	STORE 2 TRX	STORE 4 COST	STORE 4 TRX	STORE 3 COST	STORE 5 COST	STORE 3&5 TRX	PLASTICS COST	PLASTICS TRX	No. 2 PLANT COST	No. 2 PL TRX	TOTAL COSTS
873506	TRIM SHELF T.ST & TOP FC W	EA	EXTR	A	233								$19,413.27	1	$0.00		$19,413.27
873507	TRIM SHELF TOP FC 635 WH/W	EA	EXTR	A	4189								$19,413.27	1	$0.00		$19,413.27
873508	SHELF DOOR LGE M873518 H/S	EA	PWIP	A	20097								$19,413.27	1	$0.00		$19,413.27
873509	DOOR BUTTER COMPARTMENT H/	EA	PWIP	A	6078								$19,413.27	1	$0.00		$19,413.27
873510	WASHER HINGE BEARING 4.8MM	EA	PWIP	A	9652								$19,413.27	1	$0.00		$19,413.27
873512	COVER DAIRY H/S DIAMOND	EA	PWIP	A	5529								$0.00		$0.00		$0.00
873516	COVER CENTRE RAIL 635 WH/W	EA	PWIP	A	20854								$19,413.27	1	$0.00		$19,413.27
873534	TRIM BASKET FRONT WH/WH	EA	PWIP	A	13696								$19,413.27	1	$0.00		$19,413.27
873545	GASKET ASSY PC C420T,N405T	EA	WIP	A	5754								$0.00		$0.00		$0.00
873553	COVER HC H/S F&P WH/WH	EA	PWIP	A	1801								$19,413.27	1	$0.00		$19,413.27
873642	GASKET & MAG STRIP A 61	EA	PWIP	A	384700								$0.00		$0.00		$0.00
873649	GASKET & MAG STRIP A 116	EA	PWIP	A	11508								$0.00		$0.00		$0.00
873650	GASKET & MAG STRIP A 67	EA	PWIP	A	43924								$0.00		$0.00		$0.00
873651	GASKET & MAG STRIP A 89	EA	PWIP	A	117014								$0.00		$0.00		$0.00
873658	GASKET & MAG STRIP A 106	EA	PWIP	A	26112								$0.00		$0.00		$0.00
873659	GASKET & MAG STRIP A 40	EA	PWIP	A	94518								$0.00		$0.00		$0.00
873660	GASKET & MAG STRIP A 71	EA	PWIP	A	15590								$0.00		$0.00		$0.00
873661	GASKET & MAG STRIP A 134	EA	PWIP	A	36280								$0.00		$0.00		$0.00
873662	GASKET & MAG STRIP A 57	EA	PWIP	A	39754								$0.00		$0.00		$0.00
873663	GASKET & MAG STRIP A 151	EA	EXTR	A	19728								$0.00		$0.00		$0.00
873665	GASKET & MAG STRIP A 731.	EA	EXTR	A	74110								$0.00		$0.00		$0.00
873666	GASKET & MAG STRIP A 50	EA	EXTR	A	161940								$0.00		$0.00		$0.00
873667	GASKET & MAG STRIP A 1119.	EA	EXTR	A	32492								$0.00		$0.00		$0.00
873668	GASKET & MAG STRIP A 343.	EA	EXTR	A	35610								$0.00		$0.00		$0.00
873680	EVAP PLATE & TAIL ASSY UNP	EA	SYST	A	10315								$0.00		$0.00		$0.00
873681	EVAP PLATE & TAIL ASSY UNP	EA	SYST	A	189								$0.00		$0.00		$0.00
873682	EVAP PLATE & TAIL ASSY UNP	EA	SYST	A	5908								$0.00		$0.00		$0.00
873683	EVAP PLATE & TAIL ASSY UNP	EA	SYST	A	153								$0.00		$0.00		$0.00
873697	DOOR DIARY HSM872170 525 W	EA	PWIP	A	455								$19,413.27	1	$0.00		$19,413.27
873698	HANDLE PACK ASSY C270,F230	EA	WIP	A	76								$0.00		$0.00		$0.00
873699	HANDLE DOOR WH/WH	EA	PWIP	A	76								$19,413.27	1	$0.00		$19,413.27
873790	BLANK BASE PANEL 642+1-1 O	EA	STWP	A	92087								$0.00		$24,840.55	1	$24,840.55
873791	BRACKET BOTTOM HINGE LH OY	EA	PWIP	A	144477								$19,413.27	1	$0.00		$19,413.27
873792	BRACKET BOTTOM HINGE RH OY	EA	WIP	A	134031								$19,413.27	1	$0.00		$19,413.27
873793	PLUG HINGE PIN HOLE OYSTER	EA	PWIP	A	249685								$19,413.27	1	$0.00		$19,413.27
873796	CAP DOOR END OYSTER 635	EA	PWIP	A	369420								$19,413.27	1	$0.00		$19,413.27
873798	COVER HINGE TOP BRACKET OY	EA	PLAS	A	144477								$19,413.27	1	$0.00		$19,413.27
873799	PLUG DOOR END CAP OYSTER	EA	PWIP	A	411118								$19,413.27	1	$0.00		$19,413.27
873800	BLANK WRAPPER 3492+1-1 S'S	EA	STWP	A	1089								$0.00		$24,840.55	1	$24,840.55
873801	BLANK WRAPPER 3836+1-1 S'S	EA	STWP	A	1624								$0.00		$24,840.55	1	$24,840.55
873802	BLANK WRAPPER 4035+1-1 S'S	EA	STWP	A	2044								$0.00		$24,840.55	1	$24,840.55
873803	BLANK DOOR WRAP 1345+1-1 S	EA	STWP	A	774								$0.00		$24,840.55	1	$24,840.55
873804	BLANK DOOR WRAP 1163+1-1 S	EA	STWP	A	323								$0.00		$24,840.55	1	$24,840.55
873806	BLANK DOOR WRAP 1063+1-1 S	EA	STWP	A	466								$0.00		$24,840.55	1	$24,840.55
873807	BLANK DOOR WRAP 893+1-1 S	EA	STWP	A	2361								$0.00		$24,840.55	1	$24,840.55
873809	BLANK DOOR WRAP 709+1-1 S	EA	STWP	A	833								$0.00		$24,840.55	1	$24,840.55
873810	BLANK DOOR WRAP 675+1-1 S	EA	STWP	A	888								$0.00		$24,840.55	1	$24,840.55
873811	BLANK DOOR WRAP 575+1-1 S	EA	STWP	A	1158								$0.00		$24,840.55	1	$24,840.55
873812	BLANK DOOR WRAP 405+1-1 S	EA	STWP	A	2770								$0.00		$0.00		$0.00
873813	BLANK DOUBLE DOOR 810+1-1	EA	STWP	A	1135								$0.00		$24,840.55	1	$24,840.55
873817	BIN ICE M871129 H/S FRIG	EA	PWIP	A	21381								$19,413.27	1	$0.00		$19,413.27
873819	TRIM BASKET FRONT FRIG FC	EA	PWIP	A	22851								$19,413.27	1	$0.00		$19,413.27
873820	WASHER HINGE BEARING 4.8MM	EA	PWIP	A	147041								$19,413.27	1	$0.00		$19,413.27
873821	KNOB CONTROL ASSY FRIG	EA	PWIP	A	15249								$19,413.27	1	$0.00		$19,413.27

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	STORE 2 COST	STORE 2 TRX	STORE 4 COST	STORE 4 TRX	STORE 3 COST	STORE 5 COST	STORE 3&5 TRX	PLASTICS COST	PLASTICS TRX	No. 2 PLANT COST	No. 2 PL TRX	TOTAL COSTS
873823	KNOB LIGHT SWITCH FRIG 635	EA	PWIP	A	15249								$19,413.27	1	$0.00		$19,413.27
873824	BIN EGG M871129 H/S FRIG	EA	PWIP	A	24106								$19,413.27	1	$0.00		$19,413.27
873826	BIN CRISP 'T' M872607 H/S	EA	PWIP	A	11966								$19,413.27	1	$0.00		$19,413.27
873828	TRIM SHELF PC FRIG 635	EA	PWIP	A	44121								$19,413.27	1	$0.00		$19,413.27
873829	SHELF FLAP M873830 H/S FRI	EA	PWIP	A	5558								$19,413.27	1	$0.00		$19,413.27
873831	TRIM SHELF TOP FC FRIG 635	EA	PWIP	A	4105								$19,413.27	1	$0.00		$19,413.27
873832	SHELF DOOR LGE M873833 H/S	EA	PWIP	A	31441								$19,413.27	1	$0.00		$19,413.27
873834	COVER DAIRY M871064 H/S FR	EA	PWIP	A	29108								$19,413.27	1	$0.00		$19,413.27
873837	DOOR BUTTER COMP M872611 H	EA	PWIP	A	14956								$19,413.27	1	$0.00		$19,413.27
873841	WASHER HINGE BEARING 1MM O	EA	PWIP	A	292256								$19,413.27	1	$0.00		$19,413.27
873843	RAIL CROSS HC ASSY OYSTER	EA	WIP	A	8243								$0.00		$0.00		$0.00
873844	RAIL CROSS 635 OYSTER	EA	WIP	A	8243								$0.00		$0.00		$0.00
873847	CABLE HOLDER HC	EA	PWIP	A	8243								$0.00		$0.00		$0.00
873848	CONTROL SLIDE HC FRIG	EA	PWIP	A	1353								$19,413.27	1	$0.00		$19,413.27
873849	TRAY HC FRIG	EA	PWIP	A	1353								$19,413.27	1	$0.00		$19,413.27
873852	TRIM SHELF FC FRIG 525	EA	PWIP	A	3421								$0.00		$0.00		$0.00
873853	COVER CENTRE RAIL OYSTER 6	EA	PWIP	A	50965								$19,413.27	1	$0.00		$19,413.27
873855	GASKET ASSY FC C380B OYSTE	EA	WIP	A	19877								$0.00		$0.00		$0.00
873856	TRIM BASKET FRONT KELV FC	EA	PWIP	A	73903								$19,413.27	1	$0.00		$19,413.27
873857	BIN ICE M871129 H/S KELV	EA	PWIP	A	78664								$19,413.27	1	$0.00		$19,413.27
873859	BIN EGG M871129 H/S KELV	EA	PWIP	A	83446								$19,413.27	1	$0.00		$19,413.27
873860	KNOB CONTROL ASSY KELV	EA	WIP	A	58564								$19,413.27	1	$0.00		$19,413.27
873861	KNOB CONTROL KELV/SHACK 63	EA	PWIP	A	69320								$0.00		$0.00		$0.00
873862	KNOB LIGHT SWITCH KELV/SEA	EA	PWIP	A	61622					$98.23	$146.23	1	$19,413.27	1	$0.00		$19,657.73
873864	BIN CRISP 'T' M872607 H/S	EA	PWIP	A	55576								$19,413.27	1	$0.00		$19,413.27
873866	TRIM SHELF PC KELV/SHACK 6	EA	PWIP	A	206026			$80.67	1				$19,413.27	1	$0.00		$19,493.94
873867	SHELF FLAP M873868 H/S KEL	EA	PWIP	A	17519								$19,413.27	1	$0.00		$19,413.27
873869	TRIM SHELF TOP FC KELV/SHA	EA	PWIP	A	28424								$19,413.27	1	$0.00		$19,413.27
873870	SHELF DOOR LGE M873871 H/S	EA	PWIP	A	117820								$19,413.27	1	$0.00		$19,413.27
873872	COVER DAIRY M871064 H/S KE	EA	PWIP	A	117128								$19,413.27	1	$0.00		$19,413.27
873873	BIN CRISP SML HSM872209 WW	EA	PWIP	A	144								$19,413.27	1	$0.00		$19,413.27
873875	CONTROL SLIDE HC KELV/SHAC	EA	PWIP	A	6884								$19,413.27	1	$0.00		$19,413.27
873876	TRAY HC KELV/SHACK	EA	PWIP	A	6884								$19,413.27	1	$0.00		$19,413.27
873878	TRIM FC SHELF KELV/SHACK 5	EA	PWIP	A	14151								$19,413.27	1	$0.00		$19,413.27
873881	DOOR BUTTER COMP M873611 H	EA	PWIP	A	32388								$19,413.27	1	$0.00		$19,413.27
873885	BIN ICE M871129 H/S SHACK	EA	PWIP	A	13214								$19,413.27	1	$0.00		$19,413.27
873887	KNOB CONTROL ASSY SHACK	EA	PWIP	A	10756								$19,413.27	1	$0.00		$19,413.27
873888	TRAY MEAT ASSY H/S KELV P1	EA	PWIP	A	247								$19,413.27	1	$0.00		$19,413.27
873889	TRAY MEAT ASSY H/S FRIG P1	EA	PWIP	A	9								$19,413.27	1	$0.00		$19,413.27
873890	BIN EGG M871129 H/S SHACK	EA	PWIP	A	15553								$19,413.27	1	$0.00		$19,413.27
873891	TRAY MEAT ASSY H/S SHACK P	EA	PWIP	A	41								$19,413.27	1	$0.00		$19,413.27
873892	BIN CRISP 'T' M872607 H/S	EA	PWIP	A	12200								$19,413.27	1	$0.00		$19,413.27
873895	SHELF DOOR LGE M873896 HS	EA	PWIP	A	16726								$19,413.27	1	$0.00		$19,413.27
873897	COVER DAIRY M871064 H/S SH	EA	PWIP	A	21512								$19,413.27	1	$0.00		$19,413.27
873900	DOOR BUTTER COMP M872611 H	EA	PWIP	A	11978								$19,413.27	1	$0.00		$19,413.27
873905	BIN CRISP 'B' M872609 H/S	EA	PWIP	A	15826								$19,413.27	1	$0.00		$19,413.27
873907	BIN CRISP 'B' M872609 H/S	EA	PWIP	A	48638								$19,413.27	1	$0.00		$19,413.27
873909	BIN CRISP 'B' M872609 H/S	EA	PWIP	A	8458								$19,413.27	1	$0.00		$19,413.27
873993	BLANK BASE PANEL 532+1-1 O	EA	STWP	A	52390								$0.00		$24,840.55	1	$24,840.55
874006	SHELF DOOR LGE M874007 H/S	EA	PWIP	A	16467								$19,413.27	1	$0.00		$19,413.27
874010	HANDLE DOOR OYSTER	EA	PWIP	A	9788								$19,413.27	1	$0.00		$19,413.27
874011	TRIM SHELF T.ST FRIG 525	EA	PWIP	A	8124								$19,413.27	1	$0.00		$19,413.27
874012	BIN CRISP 'T' M872613 H/S	EA	PWIP	A	7793								$19,413.27	1	$0.00		$19,413.27
874015	TRAY MEAT HSM872226 KELV P	EA	PWIP	A	2883								$19,413.27	1	$0.00		$19,413.27

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	STORE 2 COST	STORE 2 TRX	STORE 4 COST	STORE 4 TRX	STORE 3 COST	STORE 5 COST	STORE 3&5 TRX	PLASTICS COST	PLASTICS TRX	No. 2 PLANT COST	No. 2 PL TRX	TOTAL COSTS
874018	DOOR DAIRY M872170 H/S FRI	EA	PWIP	A	6371								$19,413.27	1	$0.00		$19,413.27
874019	TRAY MEAT HSM872226 FRIG P	EA	PWIP	A	1391								$19,413.27	1	$0.00		$19,413.27
874020	COVER CENTRE RAIL OYST 525	EA	PWIP	A	16088								$19,413.27	1	$0.00		$19,413.27
874021	TRIM PC SHELF FRIG 525	EA	PWIP	A	21172								$19,413.27	1	$0.00		$19,413.27
874022	BIN CRISP 'B' M872209 H/S	EA	PWIP	A	2512								$19,413.27	1	$0.00		$19,413.27
874023	TRAY MEAT HSM872226 SHACK	EA	PWIP	A	779								$19,413.27	1	$0.00		$19,413.27
874024	TRIM SHELF FC FRIG MOULD 5	EA	PWIP	A	15116								$19,413.27	1	$0.00		$19,413.27
874025	SHELF DOOR LGE M874026 H/S	EA	PWIP	A	53985								$19,413.27	1	$0.00		$19,413.27
874030	TRIM SHELF T.ST KELV 525	EA	PWIP	A	24635								$19,413.27	1	$0.00		$19,413.27
874031	BIN CRISP 'T' M872613 H/S	EA	PWIP	A	19392								$19,413.27	1	$0.00		$19,413.27
874033	DOOR EVAP INNER PANEL FRIG	EA	PWIP	A	9								$0.00		$0.00		$0.00
874034	DOOR EVAP INNER PANELKELV/	EA	PWIP	A	190					$98.23	$146.23	1	$0.00		$0.00		$244.46
874035	DOOR EVAP OUTER PANEL FRIG	EA	PWIP	A	9					$98.23	$146.23	1	$0.00		$0.00		$244.46
874036	DOOR EVAP OUTER PANEL KEL/	EA	PWIP	A	190					$98.23	$146.23	1	$0.00		$0.00		$244.46
874039	TRIM SHELF PC KELV/SHACK 5	EA	PWIP	A	84291								$19,413.27	1	$0.00		$19,413.27
874040	BIN CRISP 'B' M872209 H/S	EA	PWIP	A	6214								$19,413.27	1	$0.00		$19,413.27
874042	TRIM SHELF FC KELV/SHACK M	EA	PWIP	A	51836								$19,413.27	1	$0.00		$19,413.27
874043	SHELF DOOR LGE M874044 HS	EA	PWIP	A	10478								$19,413.27	1	$0.00		$19,413.27
874046	DOOR EVAP H/S M874038 P120	EA	PWIP	A	1382								$19,413.27	1	$0.00		$19,413.27
874047	DOOR EVAP H/S M874041 P120	EA	PWIP	A	2636								$19,413.27	1	$0.00		$19,413.27
874048	DOOR EVAP H/S M874041 P120	EA	PWIP	A	779								$19,413.27	1	$0.00		$19,413.27
874049	BIN CRISP 'T' M872613 H/S	EA	PWIP	A	1672								$19,413.27	1	$0.00		$19,413.27
874050	CAP DOOR END OYST 525	EA	PWIP	A	139716								$19,413.27	1	$0.00		$19,413.27
874052	TRAY MEAT MLD KELV/SHACK P	EA	PLAS	A	228								$0.00		$0.00		$0.00
874053	DOOR DAIRY M872170 H/S KEL	EA	PWIP	A	21226								$19,413.27	1	$0.00		$19,413.27
874054	DOOR DAIRY M872170 H/S SHA	EA	PWIP	A	4543								$19,413.27	1	$0.00		$19,413.27
874058	BIN CRISP 'B' M872209 H/S	EA	PWIP	A	1423								$19,413.27	1	$0.00		$19,413.27
874061	NAMEPLATE MOULDED X-RAIL W	EA	PWIP	A	27546								$19,413.27	1	$0.00		$19,413.27
874063	NAMEPLATE MOULDED X-RAIL O	EA	PWIP	A	67566								$19,413.27	1	$0.00		$19,413.27
874065	NAMEPLATE MOULDED S/DR WHI	EA	PWIP	A	16298								$19,413.27	1	$0.00		$19,413.27
874067	NAMEPLATE MOULDED S/DR OYS	EA	PWIP	A	77672								$19,413.27	1	$0.00		$19,413.27
874161	LINER PC AS FORMED & TRIMM	EA	ABVF	A	13056								$19,413.27	1	$0.00		$19,413.27
874193	GASKET ASSY P120,C170T,240	EA	PWIP	A	37055								$0.00		$0.00		$0.00
874194	GASKET ASSY P/C190,F160,C2	EA	PWIP	A	16246								$0.00		$0.00		$0.00
874195	GASKET ASSY C270,F230	EA	PWIP	A	9864								$0.00		$0.00		$0.00
874196	GASKET ASSY TOP FC COMPACT	EA	PWIP	A	17805								$0.00		$0.00		$0.00
874227	COMPARTMENT FREEZER BTTM N	EA	WIP	A	5204								$0.00		$0.00		$0.00
874283	GASKET EVAP COVER NOTCHED	EA	WIP	A	5204								$0.00		$0.00		$0.00
874328	BASE CONTROL BOX HS874327	EA	PWIP	A	94696								$19,413.27	1	$0.00		$19,413.27
874344	EVAP PLATE ASSY UNPAINTED	EA	WIP	A	53822								$0.00		$0.00		$0.00
874345	EVAP PLATE ASSY UNPAINTED	EA		A	12546								$0.00		$0.00		$0.00
874346	EVAP PLATE ASSY UNPAINTED	EA	WIP	A	13289								$0.00		$0.00		$0.00
874347	EVAP PLATE ASSY UNPAINTED	EA	WIP	A	11753								$0.00		$0.00		$0.00
874400	CLIP EVAP LINER	EA	PWIP	A	190234								$19,413.27	1	$0.00		$19,413.27
874401	CLIP EVAP PLATE	EA	PWIP	A	190234								$19,413.27	1	$0.00		$19,413.27
874402	DUCT DRAIN F/F T-MODELS	EA	PWIP	A	17495								$19,413.27	1	$0.00		$19,413.27
874403	DUCT DRAIN ELBOW F/F T-MOD	EA	PWIP	A	17495								$19,413.27	1	$0.00		$19,413.27
874404	DUCT DRAIN 'Y'	EA	PWIP	A	77622								$19,413.27	1	$0.00		$19,413.27
874405	DUCT CONTROL BOX	EA	PWIP	A	95117								$19,413.27	1	$0.00		$19,413.27
874406	COVER EVAPORATOR	EA	PWIP	A	95117								$19,413.27	1	$0.00		$19,413.27
874408	DUCT DRAIN 'Y' F/F T-MODEL	EA	PWIP	A	17495								$19,413.27	1	$0.00		$19,413.27
874452	HEATER DEFROST FORMED 230V	EA	WIP	A	55533								$0.00		$0.00		$0.00
874453	HEATER DEFROST FORMED 230V	EA	WIP	A	6909								$0.00		$0.00		$0.00
874454	HEATER DEFROST FORMED 230V	EA	WIP	A	14999								$0.00		$0.00		$0.00

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	STORE 2 COST	STORE 2 TRX	STORE 4 COST	STORE 4 TRX	STORE 3 COST	STORE 5 COST	STORE 3&5 TRX	PLASTICS COST	PLASTICS TRX	No. 2 PLANT COST	No. 2 PL TRX	TOTAL COSTS
874455	HEATER DEFROST FORMED 230V	EA	WIP	A	12708								$0.00		$0.00		$0.00
874457	BLANK FC T&S 1078+1-1 525	EA	WIP	A	17805								$0.00		$24,840.55	1	$24,840.55
874458	BLANK FC B&B 723+1-1 525	EA	WIP	A	17805								$0.00		$24,840.55	1	$24,840.55
874465	LINER DR INNER PC C390T,N3	EA	ABVF	A	13056								$19,413.27	1	$0.00		$19,413.27
874473	HEATER DEFROST FORMED 110V	EA	WIP	A	347								$0.00		$0.00		$0.00
874474	HEATER DEFROST FORMED 110V	EA	WIP	A	492								$0.00		$0.00		$0.00
874475	HEATER DEFROST FORMED 110V	EA	WIP	A	813								$0.00		$0.00		$0.00
874476	HEATER DEFROST FORMED 110V	EA	WIP	A	37								$0.00		$0.00		$0.00
874478	SPACER DEFROST HEATER	EA	PWIP	A	499423								$19,413.27	1	$0.00		$19,413.27
874489	CONDENSER ASSY 583MM UNPA	EA	SYST	A	3409								$0.00		$0.00		$0.00
874492	BLANK WRAPPER 2592+1-1 WHI	EA	STWP	A	3809								$0.00		$24,840.55	1	$24,840.55
874505	BLANK BACK 692+1-1MM	EA	STWP	A	3809								$0.00		$24,840.55	1	$24,840.55
874518	KNOB CONTROL MOULDED VF	EA	PWIP	A	17115								$0.00		$0.00		$0.00
874519	KNOB CONTROL HSM874518 VF	EA	PWIP	A	17115								$19,413.27	1	$0.00		$19,413.27
874588	TUBE SILENCER C229 120X6.3	EA	WIP	A	3809								$0.00		$0.00		$0.00
875161	LINER PC AS FORMED & TRIMM	EA	ABVF	A	41839								$19,413.27	1	$0.00		$19,413.27
875189	BLANK BACK & BOTTOM 999+1	EA	STWP	A	19877								$0.00		$24,840.55	1	$24,840.55
875190	BLANK TOP & SIDES 1592+1-1	EA	STWP	A	19877								$0.00		$24,840.55	1	$24,840.55
875202	TRIM BOTTOM FREEZER	EA	PWIP	A	91873								$19,413.27	1	$0.00		$19,413.27
875203	COVER FC TRIM	EA	PWIP	A	91873								$19,413.27	1	$0.00		$19,413.27
875207	EXTRUSION TRIM FC C380B	LG	EXTR	A	39754								$19,413.27	1	$0.00		$19,413.27
875471	LINER DR INNER FC C380B	EA	ABVF	A	19877								$19,413.27	1	$0.00		$19,413.27
876161	LINER PC AS FORMED & TRIMM	EA	ABVF	A	13549								$19,413.27	1	$0.00		$19,413.27
876465	LINER DR INNER PC C420T,N4	EA	ABVF	A	5754								$19,413.27	1	$0.00		$19,413.27
876467	LINER DR INNER PC C415H,N4	EA	ABVF	A	7795								$19,413.27	1	$0.00		$19,413.27
877190	BLANK TOP & SIDES 1792+1-1	EA	STWP	A	21962								$0.00		$24,840.55	1	$24,840.55
877207	EXTRUSION TRIM FC C410B	LG	EXTR	A	43924								$19,413.27	1	$0.00		$19,413.27
877471	LINER DR INNER FC C410B,N3	EA	ABVF	A	21962								$19,413.27	1	$0.00		$19,413.27
879161	LINER PC FORMED & TRIMMED	EA	ABVF	A	12745								$19,413.27	1	$0.00		$19,413.27
879465	LINER DR INNER PC C370	EA	ABVF	A	9965								$19,413.27	1	$0.00		$19,413.27
900502	EXT SHT 3.0X630X 865MM WHI	SH	ABSH	A	24902								$19,413.27	1	$0.00		$19,413.27
900503	EXT SHT 3.0X630X1255MM WHI	SH	ABSH	A	9129								$19,413.27	1	$0.00		$19,413.27
900504	EXT SHT 3.0X630X1680MM WHI	SH	ABSH	A	3764								$19,413.27	1	$0.00		$19,413.27
900507	EXT SHT 3.6X750X1080MM WHI	SH	ABSH	A	41825								$19,413.27	1	$0.00		$19,413.27
900508	EXT SHT 3.6X750X1210MM WHI	SH	ABSH	A	10445								$19,413.27	1	$0.00		$19,413.27
900509	EXT SHT 3.6X750X1310MM WHI	SH	ABSH	A	10839								$19,413.27	1	$0.00		$19,413.27
900510	EXT SHT 3.6X750X1500MM WHI	SH	ABSH	A	10196								$19,413.27	1	$0.00		$19,413.27
900512	EXT GASKET OYSTER 1735+15-	EA	EXTR	A	431503								$19,413.27	1	$0.00		$19,413.27
900516	EXT SHT 1.5X630X 865MM WHI	SH	ABSH	A	20072								$19,413.27	1	$0.00		$19,413.27
900517	EXT SHT 1.5X630X1255MM WHI	SH	ABSH	A	8520								$19,413.27	1	$0.00		$19,413.27
900518	EXT SHT 1.5X630X1645MM WHI	SH	ABSH	A	3764								$19,413.27	1	$0.00		$19,413.27
900521	EXT SHT 1.5X750X 790MM WHI	SH	ABSH	A	5846								$19,413.27	1	$0.00		$19,413.27
900522	EXT SHT 1.5X750X1050MM WHI	SH	ABSH	A	40955								$19,413.27	1	$0.00		$19,413.27
900523	EXT SHT 1.5X750X1180MM WHI	SH	ABSH	A	9792								$19,413.27	1	$0.00		$19,413.27
900524	EXT SHT 1.5X750X1280MM WHI	SH	ABSH	A	4603								$19,413.27	1	$0.00		$19,413.27
900525	EXT SHT 1.5X750X1470MM WHI	SH	ABSH	A	20201								$19,413.27	1	$0.00		$19,413.27
900530	EXT SHT 1.1X630X1225MM WHI	SH	ABSH	A	7507								$19,413.27	1	$0.00		$19,413.27
900531	EXT SHT 1.1X630X1645MM WHI	SH	ABSH	A	7237								$19,413.27	1	$0.00		$19,413.27
900532	EXT SHT 1.1X750X 790MM WHI	SH	ABSH	A	41839								$19,413.27	1	$0.00		$19,413.27
900533	EXT SHT 1.1X750X1050MM WHI	SH	ABSH	A	10535								$19,413.27	1	$0.00		$19,413.27
900536	EXT SHT 1.1X750X1470MM WHI	SH	ABSH	A	8175								$19,413.27	1	$0.00		$19,413.27
900539	EXT SHT 1.1X770X1355MM WHI	SH	ABSH	A	16649								$19,413.27	1	$0.00		$19,413.27
900540	EXT SHT 1.1X770X1785MM WHI	SH	ABSH	A	5423								$19,413.27	1	$0.00		$19,413.27
900613	EXT GASKET OYST 1360MM HF	L	EXTR	A	23552								$19,413.27	1	$0.00		$19,413.27

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	STORE 2 COST	STORE 2 TRX	STORE 4 COST	STORE 4 TRX	STORE 3 COST	STORE 5 COST	STORE 3&5 TRX	PLASTICS COST	PLASTICS TRX	No. 2 PLANT COST	No. 2 PL TRX	TOTAL COSTS
900614	EXT GASKET OYST 1540MM HF	LG	EXTR	A	36806								$19,413.27	1	$0.00		$19,413.27
900615	EXT GASKET OYST 1850MM HF	LG	EXTR	A	26912								$19,413.27	1	$0.00		$19,413.27
900643	EXTRUSION CAP HF 1950MM OY	EA	EXTR	A	26982								$19,413.27	1	$0.00		$19,413.27
900644	EXTRUSION CAP HF 1650MM OY	EA	EXTR	A	60373								$0.00		$0.00		$0.00
901175	BLANK WRAPPER 2174+1-1 WHI	EA	STWP	A	5065								$0.00		$24,840.55	1	$24,840.55
901176	BLANK WRAPPER 2950+1-1 WHI	EA	STWP	A	21194								$0.00		$24,840.55	1	$24,840.55
901177	BLANK WRAPPER 3726+1-1 WHI	EA	STWP	A	25882								$0.00		$24,840.55	1	$24,840.55
904176	BLANK WRAPPER 2950+1-1 F/A	EA	STWP	A	263								$0.00		$0.00		$0.00
904177	BLANK WRAPPER 3726+1-1 F/A	EA	STWP	A	572								$0.00		$0.00		$0.00
M1901	PLASTIC ABS CRUSHINGS MULT	KG	POWD	A	38964	$255.78	5			$98.23	$146.23	1	$0.00		$0.00		$500.24
M1903	PLASTIC ABS CRUSH MONSANTO	KG	PLAS	A	12617	$767.35	15	$80.67	1	$98.23	$146.23	1	$19,413.27	1	$0.00		$20,505.75
TOTALS					9863299	$1,432.38	28	$322.69	4	$687.61	$1,023.61	7	$3,533,215.14	182	$621,013.75	25	$4,157,695.18

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SOURCE CODE	FCAST USAGE	$33,560 STORE 4 COST	416 STORE 4 TRX	$485,937 STORE 2 COST	9499 STORE 2 TRX	$75,541 STORE 3 COST	$112,453 STORE 5 COST	769 STORE 3&5 TRX	TOTAL COSTS	COST PER UNIT
053101	ACCESSORY DEFROSTER	EA	PLAS	F	126736	$322.69	4	$1,227.76	24	$98.23	$146.23	1	$1,794.91	$0.0142
053272	FILTER DRAIN OUTLET SCREEN	EA	MISC	F	10293	$322.69	4	$358.10	7	$98.23	$146.23	1	$925.25	$0.0899
362157	PLATE REINFORCING UNPAINTED	EA	PNTP	F	27048	$242.02	3	$0.00		$0.00	$0.00		$242.02	$0.0089
805428	FAN BLADE	EA	PLAS	F	37259	$161.35	2	$1,534.70	30	$98.23	$146.23	1	$1,940.51	$0.0521
805437	BRACKET COIL & COIL COVER SUPPORT	EA	PLAS	F	186295	$484.04	6	$1,483.54	29	$98.23	$146.23	1	$2,212.04	$0.0119
815042	BRACKET MOUNTING L.H. UNPLATED	EA	MISC	F	34141	$322.69	4	$0.00		$0.00	$0.00		$322.69	$0.0095
815043	BRACKET MOUNTING R.H. UNPLATED	EA	MISC	F	36669	$322.69	4	$0.00		$0.00	$0.00		$322.69	$0.0088
815051	BRACKET MOUNTING LH UNPAINTED	EA	PNTP	F	37611	$322.69	4	$0.00		$98.23	$146.23	1	$567.15	$0.0151
815052	BRACKET MOUNTING RH UNPAINTED	EA	PNTP	F	39359	$322.69	4	$0.00		$98.23	$146.23	1	$567.15	$0.0144
815085	PLATE HINGE RH PLATED	EA	MISC	F	40179	$161.35	2	$716.19	14	$98.23	$146.23	1	$1,122.00	$0.0279
815086	PLATE HINGE RH UNPLATED	EA	MISC	F	31487	$161.35	2	$0.00		$0.00	$0.00		$161.35	$0.0051
815087	PLATE HINGE LH PLATED	EA	MISC	F	40179	$161.35	2	$767.35	15	$98.23	$146.23	1	$1,173.16	$0.0292
815088	PLATE HINGE LH UNPLATED	EA	MISC	F	33513	$161.35	2	$0.00		$0.00	$0.00		$161.35	$0.0048
815192	FOOT HF SKID	EA	MISC	F	80438	$161.35	2	$1,995.11	39	$98.23	$146.23	1	$2,400.92	$0.0298
815196	PLUG WASHER DRAIN	EA	PLAS	F	40219	$161.35	2	$562.72	11	$98.23	$146.23	1	$968.53	$0.0241
815235	PLATE TAPPING LID HF	EA	MISC	F	80358	$242.02	3	$1,585.86	31	$98.23	$146.23	1	$2,072.34	$0.0258
815579	PLATE TAPPING CABINET	EA	MISC	F	80438	$242.02	3	$1,637.01	32	$98.23	$146.23	1	$2,123.49	$0.0264
815609	RETAINER SADDLE WELL CONTROL	EA	STWP	F	40219	$242.02	3	$306.94	6	$98.23	$146.23	1	$793.42	$0.0197
815760	COVER HF LIGHT PLAIN (SHARP)	EA	PWIP	F	21820	$161.35	2	$51.16	1	$98.23	$146.23	1	$456.97	$0.0209
815781	BASE INSULATOR LAMPHOLDER	EA	PLAS	F	18171	$242.02	3	$613.88	12	$98.23	$146.23	1	$1,100.36	$0.0606
815791	CLAMP CABLE HF	EA	PLAS	F	49036	$161.35	2	$204.63	4	$98.23	$146.23	1	$610.44	$0.0124
815876	PLUG FOAM	EA	PLAS	F	80438	$242.02	3	$716.19	14	$98.23	$146.23	1	$1,202.67	$0.0150
816148	PLATE TAPPING DOOR	EA	MISC	F	39456	$80.67	1	$255.78	5	$98.23	$146.23	1	$580.91	$0.0147
817431	RETAINER GASKET CORNER	EA	STWP	F	24518	$161.35	2	$665.04	13	$98.23	$146.23	1	$1,070.85	$0.0437
817433	GROMMET COVER PCB HF	EA	PLAS	F	24518	$161.35	2	$665.04	13	$98.23	$146.23	1	$1,070.85	$0.0437
817766	TRAY COMPRESSOR WIDE HF	EA	STWP	F	5969	$242.02	3	$0.00		$0.00	$0.00		$242.02	$0.0405
817767	TRAY COMPRESSOR NARROW HF	EA	STWP	F	28660	$322.69	4	$0.00		$0.00	$0.00		$322.69	$0.0113
818180	HANDLE EXTRUDED 560 STAND H160 OY	EA	EXTR	F	2372	$0.00	0	$716.19	14	$98.23	$146.23	1	$960.65	$0.4050
818181	HANDLE EXTRUDED 695 STAND H220 OY	EA	EXTR	F	5649	$0.00	0	$255.78	5	$98.23	$146.23	1	$500.24	$0.0886
818182	HANDLE EXTRUDED 1060 STAND H360 OY	EA	EXTR	F	3740	$0.00	0	$716.19	14	$98.23	$146.23	1	$960.65	$0.2569
818183	HANDLE EXTRUDED 1300 STAND H510 OY	EA	EXTR	F	1699	$0.00	0	$306.94	6	$98.23	$146.23	1	$551.40	$0.3245
818184	HANDLE EXTRUDED 1730 STAND H701 OY	EA	EXTR	F	2201	$0.00	0	$562.72	11	$98.23	$146.23	1	$807.18	$0.3667
818185	HANDLE EXTRUDED 453.5 ELECT H160 OY	EA	EXTR	F	5861	$0.00	0	$153.47	3	$98.23	$146.23	1	$397.93	$0.0679
818186	HANDLE EXTRUDED 588.5 ELECT H220 OY	EA	EXTR	F	9298	$0.00	0	$255.78	5	$98.23	$146.23	1	$500.24	$0.0538
818187	HANDLE EXTRUDED 953.5 ELECT H360 OY	EA	EXTR	F	6347	$0.00	0	$716.19	14	$98.23	$146.23	1	$960.65	$0.1514
818188	HANDLE EXTRUDED 1193.5 ELECT 510 OY	EA	EXTR	F	1844	$0.00	0	$255.78	5	$98.23	$146.23	1	$500.24	$0.2713
818189	HANDLE EXTRUDED 1623.5 ELECT 701 OY	EA	EXTR	F	1168	$0.00	0	$358.10	7	$98.23	$146.23	1	$602.56	$0.5159
818192	CAP HF HANDLE SHORT OYST	EA	EXTR	F	40179	$242.02	3	$1,125.45	22	$98.23	$146.23	1	$1,611.93	$0.0401
818193	CAP HF HANDLE STANDARD OYST	EA	EXTR	F	15661	$322.69	4	$767.35	15	$98.23	$146.23	1	$1,334.50	$0.0852
818194	BRACKET MNTG RH OYST	EA	MISC	F	40179	$0.00	0	$2,353.21	46	$98.23	$146.23	1	$2,597.67	$0.0647
818195	BRACKET MNTG LH OYST	EA	MISC	F	40179	$0.00	0	$2,302.05	45	$98.23	$146.23	1	$2,546.51	$0.0634
818197	PLATE REINFORCING OYST H510/H701	EA	MISC	F	27648	$0.00	0	$818.51	16	$98.23	$146.23	1	$1,062.97	$0.0384
818200	COVER HINGE MOULDED LH	EA	PLAS	F	40179	$242.02	3	$716.19	14	$98.23	$146.23	1	$1,202.67	$0.0299
818201	COVER HINGE MOULDED RH	EA	PLAS	F	40179	$242.02	3	$767.35	15	$98.23	$146.23	1	$1,253.83	$0.0312
818202	COVER TORSION BAR	EA	PLAS	F	80358	$161.35	2	$358.10	7	$98.23	$146.23	1	$763.91	$0.0095
818217	COVER LIGHT ASSY HF M815760	EA	MISC	F	19018	$1,532.79	19	$665.04	13	$98.23	$146.23	1	$2,442.29	$0.1284
818281	PCB ASSY HF LID 220-250V	EA	MISC	F	18650	$322.69	4	$971.98	19	$98.23	$146.23	1	$1,539.13	$0.0825
818282	PCB ASSY HF LID 100-130V	EA	MISC	F	5868	$0.00	0	$102.31	2	$98.23	$146.23	1	$346.77	$0.0591
850298	EVAP & SUCTION ASSY P120	EA	PNTP	F	4882	$0.00	0	$358.10	7	$98.23	$146.23	1	$602.56	$0.1234
850299	EVAPORATOR NOTCHED & PIERCED P120	EA	SYST	F	4631	$322.69	4	$0.00		$0.00	$0.00		$322.69	$0.0697
850301	BRACKET TEMP CONTROL BULB SOCKET	EA	MISC	F	85	$0.00	0	$102.31	2	$98.23	$146.23	1	$346.77	$4.0796
850807	FOOT LEVELLING MOULDED	EA	MISC	F	312576	$161.35	2	$1,739.33	34	$98.23	$146.23	1	$2,145.14	$0.0069
852700	CLIP FC SHELF	EA	MISC	F	189336	$161.35	2	$255.78	5	$98.23	$146.23	1	$661.59	$0.0035

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SOURCE CODE	FCAST USAGE	$33,560 STORE 4 COST	416 STORE 4 TRX	$485,937 STORE 2 COST	9499 STORE 2 TRX	$75,541 STORE 3 COST	$112,453 STORE 5 COST	769 STORE 3&5 TRX	TOTAL COSTS	COST PER UNIT
853281	CONDENSER ASSY C250T,F230,C240B	EA	PNTP	F	21436	$0.00	0	$613.88	12	$98.23	$146.23	1	$858.34	$0.0400
856281	CONDENSER ASSY C170,270,C/P190,F160	EA	PNTP	F	26475	$0.00	0	$767.35	15	$98.23	$146.23	1	$1,011.81	$0.0382
856298	EVAP & SUCTION ASSY C170T,C240B	EA	PNTP	F	21801	$0.00	0	$1,943.95	38	$98.23	$146.23	1	$2,188.41	$0.1004
870170	BRACKET SHELF SUPPORT FC SHORT	EA	PLAS	F	240974	$484.04	6	$3,683.28	72	$98.23	$146.23	1	$4,411.78	$0.0183
871009	BRACKET HINGE TOP ASSY(UNPLATED)	EA	MMET	F	132000	$1,048.75	13	$0.00		$0.00	$0.00		$1,048.75	$0.0079
871010	PLATE TAPPING TOP HINGE BRACKET	EA	MISC	F	312576	$1,048.75	13	$2,353.21	46	$98.23	$146.23	1	$3,646.42	$0.0117
871017	PIN ROLLER FINISHED	EA	STST	F	206624	$242.02	3	$818.51	16	$98.23	$146.23	1	$1,304.99	$0.0063
871039	DOOR CONTROL BOX	EA	PLAS	F	95117	$564.71	7	$818.51	16	$98.23	$146.23	1	$1,627.68	$0.0171
871123	PIN HINGE DAIRY COVER	EA	PLAS	F	113490	$161.35	2	$716.19	14	$98.23	$146.23	1	$1,122.00	$0.0099
871132	FOOT ROLLER	EA	PLAS	F	206624	$564.71	7	$1,943.95	38	$98.23	$146.23	1	$2,753.12	$0.0133
871209	BRACKET HINGE TOP ASSY(PLATED)	EA	MISC	F	156288	$322.69	4	$1,841.64	36	$98.23	$146.23	1	$2,408.79	$0.0154
871317	COVER FAN	EA	PLAS	F	37259	$403.37	5	$1,534.70	30	$98.23	$146.23	1	$2,182.53	$0.0586
871612	BIN UTILITY WHITE	EA	PLAS	F	68166	$242.02	3	$665.04	13	$98.23	$146.23	1	$1,151.52	$0.0169
871646	STRIP HOUSING HC	EA	ALUM	F	10535	$645.38	8	$306.94	6	$98.23	$146.23	1	$1,196.78	$0.1136
871659	CONDENSER ASSY 994MM HIGH	EA	PNTP	F	31059	$0.00	0	$1,278.92	25	$98.23	$146.23	1	$1,523.38	$0.0490
871907	COVER EVAP ASSY N/FROST PAINTED	EA	PNTP	F	32055	$0.00	0	$562.72	11	$98.23	$146.23	1	$807.18	$0.0252
872559	GROMMET 4.75MM SUNPRENE	EA	PLAS	F	192085	$1,129.42	14	$1,892.80	37	$0.00	$0.00		$3,022.22	$0.0157
872646	FAN MOUNTING BRACKET	EA	MISC	F	37259	$161.35	2	$358.10	7	$98.23	$146.23	1	$763.91	$0.0205
872673	MOTOR & CONTROL ASSY 230V	EA	MISC	F	35856	$564.71	7	$3,376.34	66	$98.23	$146.23	1	$4,185.51	$0.1167
872674	MOTOR & CONTROL ASSY 110V	EA	MISC	F	1403	$80.67	1	$0.00		$98.23	$146.23	1	$325.13	$0.2317
873186	CONDENSER ASSY PAINTED P/C120	EA	PNTP	F	5065	$0.00	0	$102.31	2	$98.23	$146.23	1	$346.77	$0.0685
873208	SUPPORT DOOR HC	EA	MISC	F	32110	$484.04	6	$2,097.42	41	$98.23	$146.23	1	$2,825.92	$0.0880
873238	RAIL FRAME HC	EA	MISC	F	10181	$0.00	0	$0.00		$0.00	$0.00		$0.00	$0.0000
873239	RAIL FRAME ASSY HC PLAIN	EA	PNTP	F	10181	$242.02	3	$51.16	1	$98.23	$146.23	1	$537.64	$0.0528
873240	RAIL FRAME ASSY HC WHITE	EA	PNTP	F	10535	$0.00	0	$1,023.13	20	$98.23	$146.23	1	$1,267.59	$0.1203
873252	TRAY WATER EVAP RF	EA	PLAS	F	134155	$968.08	12	$1,432.39	28	$98.23	$146.23	1	$2,644.93	$0.0197
873270	BRACKET EVAP TRAY	EA	PLAS	F	267988	$322.69	4	$1,841.64	36	$98.23	$146.23	1	$2,408.79	$0.0090
873294	EVAP & SUCTION ASSY C190,C270	EA	PNTP	F	10596	$0.00	0	$409.25	8	$98.23	$146.23	1	$653.71	$0.0617
873295	EVAP & SUCTION ASSY P190	EA	PNTP	F	297	$0.00	0	$0.00		$98.23	$146.23	1	$244.46	$0.8231
873296	EVAP & SUCTION ASSY C250T	EA	PNTP	F	6297	$0.00	0	$562.72	11	$98.23	$146.23	1	$807.18	$0.1282
873297	EVAP & SUCTION ASSY C120	EA	PNTP	F	183	$0.00	0	$0.00		$98.23	$146.23	1	$244.46	$1.3358
873391	EVAP PLATE PIERCED P190	EA	SYST	F	189	$0.00	0	$0.00		$0.00	$0.00		$0.00	$0.0000
873406	CONDENSER ASSY SPLIT PAINTED 1298MM	EA	PNTP	F	22123	$0.00	0	$767.35	15	$98.23	$146.23	1	$1,011.81	$0.0457
873408	CONDENSER ASSY 1298MM HIGH	EA	PNTP	F	46321	$0.00	0	$1,534.70	30	$98.23	$146.23	1	$1,779.16	$0.0384
873487	COVER HANDLE DOOR CAP WH/WH	EA	PLAS	F	32329	$484.04	6	$204.63	4	$98.23	$146.23	1	$933.13	$0.0289
873500	TRAY DIVIDER PC 635 WH/WH	EA	PLAS	F	10727	$484.04	6	$409.25	8	$98.23	$146.23	1	$1,137.75	$0.1061
873511	TRAY DOOR SMALL 635 WH/WH	EA	PLAS	F	54060	$484.04	6	$1,790.48	35	$98.23	$146.23	1	$2,518.98	$0.0466
873513	PIN RETAINING WH/WH	EA	PLAS	F	27164	$161.35	2	$51.16	1	$98.23	$146.23	1	$456.97	$0.0168
873514	COVER HINGE BRKT WH/WH HC	EA	PLAS	F	3602	$80.67	1	$102.31	2	$98.23	$146.23	1	$427.44	$0.1187
873639	BRACKET TIMER FROST FREE	EA	MISC	F	33346	$484.04	6	$0.00		$98.23	$146.23	1	$728.50	$0.0218
873675	TRAY COMP MOUNTING 525	EA	STWP	F	47242	$564.71	7	$0.00		$0.00	$0.00		$564.71	$0.0120
873676	TRAY COMP MOUNTING 635	EA	STWP	F	83983	$564.71	7	$51.16	1	$98.23	$146.23	1	$860.33	$0.0102
873795	COVER HANDLE DOOR CAP OYSTER	EA	PLAS	F	328435	$564.71	7	$1,125.45	22	$98.23	$146.23	1	$1,934.62	$0.0059
873825	TRAY DIVIDER PC FRIG 635	EA	PWIP	F	15249	$726.06	9	$511.57	10	$98.23	$146.23	1	$1,482.09	$0.0972
873836	SHELF DOOR SML FRIG 635	EA	PWIP	F	75688	$645.38	8	$2,199.74	43	$98.23	$146.23	1	$3,089.58	$0.0408
873838	BLANK TRAY COMP NARROW 180X642X1.2	EA	MISC	F	6800	$0.00	0	$0.00		$98.23	$146.23	1	$244.46	$0.0360
873839	BLANK TRAY COMP WIDE 180X708X1.2	EA	MISC	F	32000	$80.67	1	$0.00		$0.00	$0.00		$80.67	$0.0025
873850	COVER HINGE BRKT OYSTER 'H' & SHACK	EA	PWIP	F	37846	$161.35	2	$358.10	7	$98.23	$146.23	1	$763.91	$0.0202
873863	TRAY DIVIDER PC KELV/SHACK 635	EA	PWIP	F	66186	$403.37	5	$11,561.40	226	$98.23	$146.23	1	$12,209.23	$0.1845
873874	SHELF DOOR SML KELV 635	EA	PWIP	F	316374	$806.73	10	$6,803.83	133	$98.23	$146.23	1	$7,855.02	$0.0248
873877	SHELF DOOR SML 525 WH/WH	EA	PWIP	F	940	$0.00	0	$102.31	2	$98.23	$146.23	1	$346.77	$0.3689
873880	PIN RETAINING OYST 635	EA	PWIP	F	315408	$403.37	5	$767.35	15	$98.23	$146.23	1	$1,415.18	$0.0045
873882	TRAY MEAT ASSY FRIG P190	EA	WIP	F	9	$0.00	0	$0.00		$98.23	$146.23	1	$244.46	$27.1622

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SOURCE CODE	FCAST USAGE	$33,560 STORE 4 COST	416 STORE 4 TRX	$485,937 STORE 2 COST	9499 STORE 2 TRX	$75,541 STORE 3 COST	$112,453 STORE 5 COST	769 STORE 3&5 TRX	TOTAL COSTS	COST PER UNIT
873883	TRAY MEAT ASSY KELV/SHACK P190	EA	WIP	F	329	$0.00	0	$0.00		$98.23	$146.23	1	$244.46	$0.7430
873899	SHELF DOOR SMALL SHACK 635	EA	PWIP	F	53034	$484.04	6	$869.66	17	$98.23	$146.23	1	$1,598.16	$0.0301
874008	SHELF DOOR SML FRIG 525	EA	PWIP	F	11083	$564.71	7	$358.10	7	$98.23	$146.23	1	$1,167.27	$0.1053
874014	SHELF DOOR SMALL SHACK 525	EA	PWIP	F	6190	$242.02	3	$51.16	1	$98.23	$146.23	1	$537.64	$0.0869
874027	SHELF DOOR SML KELV 525	EA	PLAS	F	38992	$887.40	11	$1,074.29	21	$98.23	$146.23	1	$2,206.15	$0.0566
874029	DOOR EVAP ASSY FRIG	EA	PWIP	F	9	$0.00	0	$0.00		$0.00	$0.00		$0.00	$0.0000
874032	DOOR EVAP ASSY KELV/SHACK	EA	PWIP	F	288	$0.00	0	$0.00		$98.23	$146.23	1	$244.46	$0.8488
874241	RAIL GUIDE ASSY PLAIN LH	EA	PNTP	F	9836	$242.02	3	$51.16	1	$98.23	$146.23	1	$537.64	$0.0547
874242	RAIL GUIDE ASSY PLAIN RH	EA	PNTP	F	9635	$242.02	3	$51.16	1	$98.23	$146.23	1	$537.64	$0.0558
874243	RAIL GUIDE ASSY WHITE LH	EA	PNTP	F	10535	$0.00	0	$1,023.13	20	$98.23	$146.23	1	$1,267.59	$0.1203
874244	RAIL GUIDE ASSY WHITE RH	EA	PNTP	F	10535	$0.00	0	$971.98	19	$98.23	$146.23	1	$1,216.44	$0.1155
874282	COVER EVAP ASSY N/FROST PAINTED	EA	PNTP	F	5204	$0.00	0	$153.47	3	$98.23	$146.23	1	$397.93	$0.0765
874340	EVAP PLATE ASSY C380B,410,369,335T	EA	PNTP	F	55767	$0.00	0	$1,995.11	39	$98.23	$146.23	1	$2,239.57	$0.0402
874341	EVAP PLATE ASSY C390T,N375T	EA	PNTP	F	13056	$0.00	0	$204.63	4	$98.23	$146.23	1	$449.09	$0.0344
874342	EVAP PLATE ASSY C420T,N405T	EA	PNTP	F	13549	$0.00	0	$358.10	7	$98.23	$146.23	1	$602.56	$0.0445
874343	EVAP PLATE ASSY C370,C365H	EA	PNTP	F	12745	$0.00	0	$767.35	15	$98.23	$146.23	1	$1,011.81	$0.0794
874483	BRACKET STIFFENER RF	EA	MISC	F	25490	$322.69	4	$51.16	1	$98.23	$146.23	1	$618.31	$0.0243
874490	CONDENSER ASSY 583MM HIGH	EA	PNTP	F	3809	$0.00	0	$204.63	4	$98.23	$146.23	1	$449.09	$0.1179
874496	TRAY WATER EVAP NOTCHED	EA	PLAS	F	5839	$0.00	0	$0.00		$0.00	$0.00		$0.00	$0.0000
874529	TUBE OVERFLOW TRAY UNPAINTED 635	EA	PNTP	F	5215	$0.00	0	$153.47	3	$0.00	$0.00		$153.47	$0.0294
874700	BLANK BRACKET 2400X380X1.15MM	EA	MMET	F	1101	$0.00	0	$0.00		$0.00	$0.00		$0.00	$0.0000
901208	TRIM CORNER WHITE	EA	PLAS	F	296154	$242.02	3	$1,125.45	22	$98.23	$146.23	1	$1,611.93	$0.0054
904208	TRIM CORNER FRESH AVACADO	EA	PLAS	F	1670	$0.00	0	$0.00		$98.23	$146.23	1	$244.46	$0.1464
905208	TRIM CORNER ALMOND	EA	PLAS	F	5012	$0.00	0	$0.00		$98.23	$146.23	1	$244.46	$0.0488
907044	CARTON BASE PAD H510	EA	CART	F	3545	$242.02	3	$255.78	5	$0.00	$0.00		$497.80	$0.1404
907045	CARTON BASE PAD H701	EA	CART	F	3372	$161.35	2	$255.78	5	$0.00	$0.00		$417.13	$0.1237
M7320	COIL P/P 388X0.5 WHITE	KG	STPP	F	104312	$242.02	3	$0.00		$98.23	$146.23	1	$486.48	$0.0047
M7346	COIL P/P 179+1-1X0.5 WHITE	KG	STPP	F	5340	$161.35	2	$51.16	1	$0.00	$0.00		$212.51	$0.0398
M7347	COIL P/P 179+1-1X0.5 OYSTER	KG	STPP	F	43633	$161.35	2	$102.31	2	$98.23	$146.23	1	$508.12	$0.0116
M7365	COIL P/P 458+3-0X0.5 WHITE	KG	STPP	F	348757	$403.37	5	$0.00		$98.23	$146.23	1	$647.83	$0.0019
M7366	COIL P/P 577+1-1X0.5 WHITE	KG	STPP	F	15422	$242.02	3	$0.00		$98.23	$146.23	1	$486.48	$0.0315
M7457	COIL P/P 459+1-1X0.5 OYSTER	KG	STPP	F	50852	$161.35	2	$0.00		$98.23	$146.23	1	$405.81	$0.0080
M7602	COIL ZINC GLEN ZM 23.3X0.6	KG	STGZ	F	99399	$322.69	4	$204.63	4	$98.23	$146.23	1	$771.78	$0.0078
M7659	COIL ZINC ALLOY 186X1.2MM	KG	STGZ	F	2892	$80.67	1	$0.00		$98.23	$146.23	1	$325.13	$0.1124
M7663	COIL ZINC GLEN 105.6X1.2MM	KG	STGZ	F	10180	$80.61	1	$0.00		$98.23	$146.23	1	$325.07	$0.0319
M7672	COIL ZINC GLEN 46X1.2MM+0.5-0	KG	STGZ	F	260	$0.00	0	$0.00		$0.00	$0.00		$0.00	$0.0000
					7520546	$32,269.23	400	$104,717.71	2047	$11,787.60	$17,547.60	120	$166,322.14	

Appendix No. 3	Source Code A - 2	$322.69	4
Appendix No. 15	Source Code P - 1	564.71	7
Appendix No. 16	Source Code P - 2	403.37	5
		$33,560.00	416

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	INVENG1/2 COSTS	INVENG3/4 COSTS	INVENG5/6 COSTS	INVENG7/8 COSTS	TOTAL COSTS	COST PER UNIT
12500	C/KELV H160SL J WHWH V802	EA	CAXP	G	42	$371.06	$3,652.12	$0.00	$96.52	$4,119.70	$98.0881
12501	C/KELV H220SL J WHWH V802	EA	CAXP	G	15	$132.52	$1,335.13	$0.00	$34.47	$1,502.12	$100.1413
12502	C/KELV H360SL J WHWH V802	EA	CAXP	G	15	$132.52	$1,458.62	$0.00	$34.47	$1,625.61	$108.3740
12503	C/KELV H510SL J WHWH V802	EA	CAXP	G	8	$70.67	$883.88	$0.00	$18.38	$972.93	$121.6163
12504	C/KELV H701SL J WHWH V802	EA	CAXP	G	9	$79.51	$1,067.02	$0.00	$20.68	$1,167.21	$129.6900
12505	C/KELV H220EL J WHWH V802	EA	CAXP	G	174	$1,537.24	$15,487.58	$0.00	$399.86	$17,424.68	$100.1418
12506	C/KELV H360EL J WHWH V802	EA	CAXP	G	200	$1,766.93	$19,448.26	$0.00	$459.61	$21,674.80	$108.3740
12508	C/KELV H510EL J WHWH V802	EA	CAXP	G	130	$1,148.50	$14,363.01	$0.00	$298.75	$15,810.26	$121.6174
12509	C/KELV H701EL J WHWH V802	EA	CAXP	G	5	$44.18	$592.79	$0.00	$11.49	$648.46	$129.6920
12512	C/KELV H360EL J WHWH V810	EA	CAXP	G	287	$2,535.55	$27,908.25	$0.00	$659.55	$31,103.35	$108.3740
12515	C/SHARP H160EL J WHWH V810	EA	CAXP	G	576	$5,088.77	$50,086.35	$0.00	$1,323.69	$56,498.81	$98.0882
12516	C/SHARP H220EL J WHWH V810	EA	CAXP	G	4265	$37,679.90	$379,623.79	$0.00	$9,801.27	$427,104.96	$100.1418
12518	C/SHACK H220SL J WHWH V810	EA	CAXP	G	3494	$30,868.36	$310,997.78	$0.00	$8,029.46	$349,895.60	$100.1418
12519	C/SHACK H360SL J WHWH V810	EA	CAXP	G	1428	$12,615.92	$138,860.58	$0.00	$3,281.64	$154,758.14	$108.3740
12520	C/SHACK H510SL J WHWH V810	EA	CAXP	G	1021	$9,020.20	$112,804.93	$0.00	$2,346.33	$124,171.46	$121.6175
12521	C/SHACK H701SL J WHWH V810	EA	CAXP	G	1175	$10,380.75	$139,305.17	$0.00	$2,700.23	$152,386.15	$129.6903
12522	C/SHACK H701SL J WHWH V802	EA	CAXP	G	881	$7,783.34	$104,449.24	$0.00	$2,024.60	$114,257.18	$129.6903
12524	C/SHACK H220SL J WHWH V802	EA	CAXP	G	697	$6,157.76	$62,039.34	$0.00	$1,601.76	$69,798.86	$100.1418
12525	C/SHACK H360SL J WHWH V802	EA	CAXP	G	766	$6,767.37	$74,486.84	$0.00	$1,760.32	$83,014.53	$108.3741
12526	C/SHACK H510SL J WHWH V802	EA	CAXP	G	489	$4,320.16	$54,027.04	$0.00	$1,123.76	$59,470.96	$121.6175
12527	C/SHARP H360EL J WHWH V810	EA	CAXP	G	659	$5,822.05	$64,082.02	$0.00	$1,514.43	$71,418.50	$108.3741
12528	C/SHACK H160SL J WHWH V803	EA	CAXP	G	127	$1,122.01	$11,043.34	$0.00	$291.85	$12,457.20	$98.0882
12530	C/SHACK H360SL J WHWH V803	EA	CAXP	G	536	$4,735.39	$52,121.34	$0.00	$1,231.77	$58,088.50	$108.3741
12531	C/SHACK H701SL J WHWH V803	EA	CAXP	G	104	$918.81	$12,329.99	$0.00	$239.00	$13,487.80	$129.6904
12532	C/SHACK H510SL J WHWH V803	EA	CAXP	G	147	$1,298.70	$16,241.26	$0.00	$337.82	$17,877.78	$121.6176
12533	C/KELV H510SL J WHWH V803	EA	CAXP	G	3	$26.50	$331.45	$0.00	$6.89	$364.84	$121.6133
12534	C/KELV H360SL J WHWH V803	EA	CAXP	G	6	$53.01	$583.45	$0.00	$13.79	$650.25	$108.3750
12535	C/KELV H220SL J WHWH V803	EA	CAXP	G	272	$2,403.04	$24,210.47	$0.00	$625.08	$27,238.59	$100.1419
12536	C/KELV H160SL J WHWH V803	EA	CAXP	G	43	$379.89	$3,739.09	$0.00	$98.82	$4,217.80	$98.0884
12537	C/KELV H220EL J WHWH V803	EA	CAXP	G	23	$203.21	$2,047.21	$0.00	$52.86	$2,303.28	$100.1426
12538	C/KELV H360EL J WHWH V803	EA	CAXP	G	38	$335.72	$3,695.17	$0.00	$87.33	$4,118.22	$108.3742
12539	C/KELV H510EL J WHWH V803	EA	CAXP	G	16	$141.36	$1,767.76	$0.00	$36.77	$1,945.89	$121.6181
12540	C/FRIG H360EL J WHWH V813	EA	CAXP	G	96	$848.13	$9,335.16	$0.00	$220.61	$10,403.90	$108.3740
12541	C/FRIG H510EL J WHWH V813	EA	CAXP	G	41	$362.22	$4,529.87	$0.00	$94.22	$4,986.31	$121.6173
12542	C/FRIG H701EL J WHWH V813	EA	CAXP	G	52	$459.41	$6,165.00	$0.00	$119.50	$6,743.91	$129.6906
12545	C/KELV H701SL J WHWH V803	EA	CAXP	G	5	$44.18	$592.79	$0.00	$11.49	$648.46	$129.6920
12552	C/KELV H160EL J WHWH V802	EA	CAXP	G	2	$17.67	$173.91	$0.00	$4.60	$196.18	$98.0900
12854	C/FRIG F310 J WHWH	EA	CAFR	G	1228	$4,460.57	$62,010.57	$4,854.82	$0.00	$71,325.96	$58.0830
12855	C/FRIG C370 J WHWH	EA	CAFR	G	1656	$6,015.24	$84,186.34	$6,546.89	$0.00	$96,748.47	$58.4230
12856	C/FRIG C365H J WHWH	EA	CAFR	G	429	$1,558.29	$27,581.45	$1,696.02	$0.00	$30,835.76	$71.8782
12857	C/FRIG C335T J WHWH	EA	CAFR	G	1610	$5,848.16	$100,826.96	$6,365.03	$0.00	$113,040.15	$70.2113
12859	C/FRIG C390T J WHWH	EA	CAFR	G	636	$2,310.20	$41,754.70	$2,514.39	$0.00	$46,579.29	$73.2379
12860	C/FRIG N375T J SASA	EA	CAFR	G	8	$29.05	$568.72	$31.63	$0.00	$629.40	$78.6750
12861	C/FRIG C380B J WHWH	EA	CAFR	G	3062	$11,122.40	$200,230.70	$12,105.43	$0.00	$223,458.53	$72.9780
12865	C/FRIG N400H J SASA	EA	CAFR	G	8	$29.05	$683.82	$31.63	$0.00	$744.50	$93.0625
12866	C/FRIG C410B J WHWH	EA	CAFR	G	913	$3,316.38	$59,626.44	$3,609.49	$0.00	$66,552.31	$72.8941
12867	C/FRIG N395B J SASA	EA	CAFR	G	203	$737.37	$15,007.73	$802.55	$0.00	$16,547.65	$81.5155
12868	C/KELV F310 J SASA	EA	CAKE	G	201	$730.11	$10,149.94	$794.64	$0.00	$11,674.69	$58.0830
12869	C/KELV C370 J SASA	EA	CAKE	G	275	$998.90	$13,980.21	$1,087.20	$0.00	$16,066.31	$58.4229
12870	C/KELV C365H J WHWH	EA	CAKE	G	690	$2,506.35	$44,361.78	$2,727.87	$0.00	$49,596.00	$71.8783
12871	C/KELV C335T J SASA	EA	CAKE	G	30	$108.97	$1,878.77	$118.60	$0.00	$2,106.34	$70.2113
12873	C/KELV C390T J WHWH	EA	CAKE	G	1030	$3,741.37	$67,621.61	$4,072.04	$0.00	$75,435.02	$73.2379
12874	C/KELV N375T J SASA	EA	CAKE	G	12	$43.59	$853.07	$47.44	$0.00	$944.10	$78.6750
12875	C/KELV C380B J SASA	EA	CAKE	G	532	$1,932.43	$34,788.61	$2,103.23	$0.00	$38,824.27	$72.9780

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	INVENG1/2 COSTS	INVENG3/4 COSTS	INVENG5/6 COSTS	INVENG7/8 COSTS	TOTAL COSTS	COST PER UNIT
12879	C/KELV N400H J SASA	EA	CAKE	G	14	$50.85	$1,196.69	$55.35	$0.00	$1,302.89	$93.0636
12880	C/KELV C410B J WHWH	EA	CAKE	G	1482	$5,383.22	$96,786.84	$5,858.99	$0.00	$108,029.05	$72.8941
12881	C/KELV N395B J SASA	EA	CAKE	G	377	$1,369.42	$27,871.49	$1,490.45	$0.00	$30,731.36	$81.5155
12882	C/SHACK F310 J WHWH	EA	CASH	G	1216	$4,416.99	$61,404.60	$4,807.38	$0.00	$70,628.97	$58.0830
12883	C/SHACK C370 J WHWH	EA	CASH	G	1898	$6,894.29	$96,488.93	$7,503.62	$0.00	$110,886.84	$58.4230
12884	C/FRIG N375T J WHWH	EA	CAFR	G	686	$2,491.82	$48,767.35	$2,712.06	$0.00	$53,971.23	$78.6753
12885	C/SHACK C335T J WHWH	EA	CASH	G	1324	$4,809.30	$82,916.09	$5,234.35	$0.00	$92,959.74	$70.2113
12887	C/SHACK C390T J WHWH	EA	CASH	G	417	$1,514.70	$27,376.90	$1,648.58	$0.00	$30,540.18	$73.2378
12888	C/SHACK N375T J WHWH	EA	CASH	G	372	$1,351.25	$26,445.27	$1,470.68	$0.00	$29,267.20	$78.6753
12889	C/SHACK C380B J WHWH	EA	CASH	G	2313	$8,401.73	$151,251.99	$9,144.30	$0.00	$168,798.02	$72.9780
12892	C/SHACK N405T J WHWH	EA	CASH	G	470	$1,707.22	$34,154.81	$1,858.12	$0.00	$37,720.15	$80.2556
12894	C/FRIG N400H J WHWH	EA	CAFR	G	838	$3,043.94	$71,630.24	$3,312.98	$0.00	$77,987.16	$93.0634
12895	C/SHACK C410B J WHWH	EA	CASH	G	821	$2,982.21	$53,618.08	$3,245.77	$0.00	$59,846.06	$72.8941
12896	C/SHACK N395B J WHWH	EA	CASH	G	1085	$3,941.16	$80,213.69	$4,289.48	$0.00	$88,444.33	$81.5155
12905	C/F&P C415H H WWWW V812	EA	CAAU	G	489	$4,320.16	$38,061.30	$0.00	$1,614.95	$43,996.41	$89.9722
12906	C/F&P N395B H WWWW V812	EA	CAAU	G	1355	$11,970.99	$100,174.71	$0.00	$4,474.95	$116,620.65	$86.0669
12913	C/F&P N375T H WWWW V812	EA	CAAU	G	421	$3,719.39	$29,928.65	$0.00	$1,390.37	$35,038.41	$83.2266
12914	C/F&P N405T H WWWW V812	EA	CAAU	G	413	$3,648.72	$30,012.63	$0.00	$1,363.95	$35,025.30	$84.8070
12915	C/F&P N400H H WWWW V812	EA	CAAU	G	209	$1,846.45	$17,864.82	$0.00	$690.23	$20,401.50	$97.6148
12953	C/FRIG N395B J WHWH	EA	CAFR	G	1817	$6,600.07	$134,330.22	$7,183.40	$0.00	$148,113.69	$81.5155
12954	C/KELV F310 J WHWH	EA	CAKE	G	1931	$7,014.14	$97,510.10	$7,634.09	$0.00	$112,158.33	$58.0830
12955	C/KELV C370 J WHWH	EA	CAKE	G	2705	$9,825.62	$137,514.52	$10,694.05	$0.00	$158,034.19	$58.4230
12956	C/KELV C335T J WHWH	EA	CAKE	G	2607	$9,469.65	$163,264.54	$10,306.61	$0.00	$183,040.80	$70.2113
12957	C/KELV N375T J WHWH	EA	CAKE	G	1115	$4,050.12	$79,264.72	$4,408.08	$0.00	$87,722.92	$78.6753
12958	C/KELV C380B J WHWH	EA	CAKE	G	4986	$18,111.12	$326,045.16	$19,711.84	$0.00	$363,868.12	$72.9780
12960	C/KELV N400H J WHWH	EA	CAKE	G	1375	$4,994.53	$117,531.72	$5,435.98	$0.00	$127,962.23	$93.0634
12961	C/KELV N395B J WHWH	EA	CAKE	G	3440	$12,495.45	$254,318.08	$13,599.83	$0.00	$280,413.36	$81.5155
12962	C/KELV P120 J WHWH	EA	CAKE	G	2156	$7,831.45	$75,687.76	$9,445.61	$0.00	$92,964.82	$43.1191
12963	C/KELV C190 J WHWH	EA	CAKE	G	2205	$8,009.43	$87,373.48	$9,660.28	$0.00	$105,043.19	$47.6386
12964	C/KELV F160 J WHWH	EA	CAKE	G	1397	$5,074.46	$114,184.14	$6,120.37	$0.00	$125,378.97	$89.7487
12965	C/KELV C170T J WHWH	EA	CAKE	G	3835	$13,930.23	$205,634.99	$16,801.45	$0.00	$236,366.67	$61.6341
12966	C/KELV C270 J WHWH	EA	CAKE	G	1339	$4,863.77	$58,603.52	$5,866.27	$0.00	$69,333.56	$51.7801
12967	C/KELV C250T J WHWH	EA	CAKE	G	1316	$4,780.23	$132,131.74	$5,765.50	$0.00	$142,677.47	$108.4175
12968	C/KELV C240B J WHWH	EA	CAKE	G	4076	$14,805.65	$238,407.26	$17,857.29	$0.00	$271,070.20	$66.5040
12969	C/KELV F230 J WHWH	EA	CAKE	G	1427	$5,183.43	$75,991.96	$6,251.80	$0.00	$87,427.19	$61.2664
12970	C/FRIG P120 J WHWH	EA	CAFR	G	1327	$4,820.19	$46,585.19	$5,813.69	$0.00	$57,219.07	$43.1191
12971	C/FRIG C190 J WHWH	EA	CAFR	G	1369	$4,972.75	$54,246.85	$5,997.70	$0.00	$65,217.30	$47.6386
12972	C/FRIG F160 J WHWH	EA	CAFR	G	927	$3,367.23	$75,768.57	$4,061.26	$0.00	$83,197.06	$89.7487
12973	C/FRIG C170T J WHWH	EA	CAFR	G	2324	$8,441.70	$124,614.27	$10,181.63	$0.00	$143,237.60	$61.6341
12975	C/FRIG C270 J WHWH	EA	CAFR	G	804	$2,920.45	$35,188.37	$3,522.39	$0.00	$41,631.21	$51.7801
12976	C/FRIG C250T J WHWH	EA	CAFR	G	788	$2,862.33	$79,118.40	$3,452.29	$0.00	$85,433.02	$108.4175
12977	C/FRIG C240B J WHWH	EA	CAFR	G	2512	$9,124.59	$146,928.12	$11,005.28	$0.00	$167,057.99	$66.5040
12978	C/FRIG F230 J WHWH	EA	CAFR	G	973	$3,534.32	$51,815.12	$4,262.79	$0.00	$59,612.23	$61.2664
12980	C/SHACK P120 J WHWH	EA	CASH	G	779	$2,829.64	$27,347.29	$3,412.86	$0.00	$33,589.79	$43.1191
12981	C/SHACK C190 J WHWH	EA	CASH	G	1089	$3,955.67	$43,151.80	$4,771.00	$0.00	$51,878.47	$47.6386
12982	C/SHACK F160 J WHWH	EA	CASH	G	581	$2,110.41	$47,488.17	$2,545.41	$0.00	$52,143.99	$89.7487
12983	C/SHACK C170T J WHWH	EA	CASH	G	1439	$5,227.02	$77,160.04	$6,304.38	$0.00	$88,691.44	$61.6341
12985	C/SHACK C270 J WHWH	EA	CASH	G	724	$2,629.86	$31,687.04	$3,171.90	$0.00	$37,488.80	$51.7801
12987	C/SHACK C240B J WHWH	EA	CASH	G	1423	$5,168.90	$83,231.98	$6,234.28	$0.00	$94,635.16	$66.5040
12988	C/SHACK F230 J WHWH	EA	CASH	G	543	$1,972.39	$28,916.36	$2,378.94	$0.00	$33,267.69	$61.2665
12996	C/FRIG H160S J WHWH V802	EA	CAXP	G	3	$26.50	$260.86	$0.00	$6.89	$294.25	$98.0833
12997	C/FRIG H220S J WHWH V802	EA	CAXP	G	13	$114.85	$1,157.11	$0.00	$29.87	$1,301.83	$100.1408
12998	C/FRIG H360S J WHWH V802	EA	CAXP	G	5	$44.18	$486.21	$0.00	$11.49	$541.88	$108.3760
13002	C/KELV H160S J WHWH V802	EA	CAXP	G	5	$44.18	$434.78	$0.00	$11.49	$490.45	$98.0900

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	INVENG1/2 COSTS	INVENG3/4 COSTS	INVENG5/6 COSTS	INVENG7/8 COSTS	TOTAL COSTS	COST PER UNIT
13003	C/KELV H220S J WHWH V802	EA	CAXP	G	5	$44.18	$445.04	$0.00	$11.49	$500.71	$100.1420
13004	C/KELV H360S J WHWH V802	EA	CAXP	G	10	$88.36	$972.41	$0.00	$22.98	$1,083.75	$108.3750
13005	C/KELV H510S J WHWH V802	EA	CAXP	G	16	$141.36	$1,767.76	$0.00	$36.77	$1,945.89	$121.6181
13006	C/KELV H701S J WHWH V802	EA	CAXP	G	10	$88.36	$1,185.57	$0.00	$22.98	$1,296.91	$129.6910
13007	C/SHACK H160S J WHWH V802	EA	CAXP	G	24	$212.03	$2,086.93	$0.00	$55.15	$2,354.11	$98.0879
13008	C/SHACK H220S J WHWH V802	EA	CAXP	G	27	$238.54	$2,403.25	$0.00	$62.05	$2,703.84	$100.1422
13009	C/SHACK H360S J WHWH V802	EA	CAXP	G	25	$220.86	$2,431.03	$0.00	$57.45	$2,709.34	$108.3736
13011	C/SHACK H510S J WHWH V802	EA	CAXP	G	14	$123.68	$1,546.78	$0.00	$32.17	$1,702.63	$121.6164
13012	C/SHACK H701S J WHWH V802	EA	CAXP	G	16	$141.36	$1,896.92	$0.00	$36.79	$2,075.07	$129.6919
13013	C/KELV H160E J WHWH	EA	CAKE	G	1982	$7,199.41	$172,345.74	$0.00	$11,165.75	$190,710.90	$96.2214
13014	C/KELV H220E J WHWH	EA	CAKE	G	1892	$6,872.50	$168,405.21	$0.00	$10,658.73	$185,936.44	$98.2751
13016	C/KELV H360E J WHWH	EA	CAKE	G	2012	$7,308.38	$195,649.51	$0.00	$11,334.76	$214,292.65	$106.5073
13017	C/KELV H510E J WHWH	EA	CAKE	G	518	$1,881.58	$57,231.09	$0.00	$2,918.19	$62,030.86	$119.7507
13018	C/KELV H701E J WHWH	EA	CAKE	G	273	$991.65	$32,366.22	$0.00	$1,537.97	$34,895.84	$127.8236
13019	C/SHACK H160E J WHWH	EA	CASH	G	320	$1,162.37	$27,825.75	$0.00	$1,802.75	$30,790.87	$96.2215
13020	C/SHACK H220E J WHWH	EA	CASH	G	580	$2,106.78	$51,625.27	$0.00	$3,267.48	$56,999.53	$98.2751
13021	C/SHACK H360E J WHWH	EA	CASH	G	710	$2,579.00	$69,041.33	$0.00	$3,999.84	$75,620.17	$106.5073
13022	C/SHACK H510E J WHWH	EA	CASH	G	301	$1,093.35	$33,255.91	$0.00	$1,695.71	$36,044.97	$119.7507
13023	C/SHACK H701E J WHWH	EA	CASH	G	195	$708.31	$23,118.73	$0.00	$1,098.55	$24,925.59	$127.8235
13024	C/FRIG H160E J WHWH	EA	CAFR	G	1343	$4,878.31	$116,781.20	$0.00	$7,565.90	$129,225.41	$96.2215
13025	C/FRIG H220E J WHWH	EA	CAFR	G	1272	$4,620.41	$113,219.57	$0.00	$7,165.91	$125,005.89	$98.2751
13026	C/FRIG H360E J WHWH	EA	CAFR	G	1390	$5,049.04	$135,165.42	$0.00	$7,830.67	$148,045.13	$106.5073
13027	C/FRIG H510E J WHWH	EA	CAFR	G	351	$1,274.97	$38,780.15	$0.00	$1,977.39	$42,032.51	$119.7507
13028	C/FRIG H701E J WHWH	EA	CAFR	G	185	$672.00	$21,933.16	$0.00	$1,042.20	$23,647.36	$127.8236
13039	C/F&P F310 H WWWW	EA	CAFP	G	358	$1,300.39	$18,078.00	$1,415.33	$0.00	$20,793.72	$58.0830
13040	C/F&P C370 H WWWW	EA	CAFP	G	371	$1,347.61	$18,860.58	$1,466.73	$0.00	$21,674.92	$58.4230
13041	C/F&P C365H H WWWW	EA	CAFP	G	180	$653.83	$11,572.64	$711.62	$0.00	$12,938.09	$71.8783
13042	C/F&P C335T H WWWW	EA	CAAU	G	322	$1,169.63	$20,165.39	$1,273.01	$0.00	$22,608.03	$70.2113
13043	C/F&P C390T H WWWW	EA	CAFP	G	166	$602.97	$10,898.24	$656.27	$0.00	$12,157.48	$73.2378
13044	C/F&P C380B H WWWW	EA	CAFP	G	1057	$3,839.44	$69,119.48	$4,178.78	$0.00	$77,137.70	$72.9780
13047	C/F&P C410B H WWWW	EA	CAFP	G	226	$820.92	$14,759.67	$893.48	$0.00	$16,474.07	$72.8941
13056	C/FRIG C240B H WWWW V813	EA	CAXP	G	144	$1,272.21	$8,422.63	$0.00	$636.56	$10,331.40	$71.7458
13065	C/KELV C229 J WHWH	EA	CAKE	G	1650	$5,993.45	$76,578.31	$6,523.17	$0.00	$89,094.93	$53.9969
13067	C/KELV N369B J WHWH	EA	CAKE	G	1689	$6,135.12	$122,523.89	$6,677.36	$0.00	$135,336.37	$80.1281
13068	C/FRIG C229 J WHWH	EA	CAFR	G	935	$3,396.29	$43,394.37	$3,696.46	$0.00	$50,487.12	$53.9969
13070	C/FRIG N369B J WHWH	EA	CAFR	G	1123	$4,079.18	$81,464.96	$4,439.71	$0.00	$89,983.85	$80.1281
13071	C/SHACK C229 J WHWH	EA	CASH	G	1224	$4,446.05	$56,807.18	$4,839.01	$0.00	$66,092.24	$53.9969
13100	C/KELV P120 J WHWH V802	EA	CAXP	G	271	$2,394.19	$9,513.63	$0.00	$1,197.97	$13,105.79	$48.3608
13101	C/KELV P190 J WHWH V802	EA	CAXP	G	134	$1,183.85	$5,364.85	$0.00	$592.35	$7,141.05	$53.2914
13102	C/KELV C170T J WHWH V802	EA	CAXP	G	2120	$18,729.51	$113,675.66	$0.00	$9,371.53	$141,776.70	$66.8758
13103	C/KELV C380B J WHWH V802	EA	CAXP	G	299	$2,641.57	$19,552.24	$0.00	$987.46	$23,181.27	$77.5293
13104	C/KELV C410B J WHWH V802	EA	CAXP	G	202	$1,784.61	$13,192.27	$0.00	$667.11	$15,643.99	$77.4455
13105	C/FRIG P120 J WHWH V802	EA	CAXP	G	54	$477.07	$1,895.70	$0.00	$238.71	$2,611.48	$48.3607
13106	C/FRIG C170T J WHWH V802	EA	CAXP	G	241	$2,129.15	$12,922.56	$0.00	$1,065.35	$16,117.06	$66.8758
13107	C/FRIG C250T J WHWH V802	EA	CAXP	G	65	$574.25	$6,526.27	$0.00	$287.33	$7,387.85	$113.6592
13108	C/FRIG C335T J WHWH V802	EA	CAXP	G	116	$1,024.82	$7,264.55	$0.00	$383.10	$8,672.47	$74.7627
13109	C/FRIG C390T J WHWH V802	EA	CAXP	G	61	$538.91	$4,004.78	$0.00	$201.46	$4,745.15	$77.7893
13113	C/FRIG N400H J WHWH V802	EA	CAXP	G	3	$26.50	$256.44	$0.00	$9.91	$292.85	$97.6167
13114	C/KELV N375T J WHWH V802	EA	CAXP	G	621	$5,486.34	$44,146.54	$0.00	$2,050.88	$51,683.76	$83.2267
13115	C/KELV N395B J WHWH V802	EA	CAXP	G	372	$3,286.50	$27,501.83	$0.00	$1,228.55	$32,016.88	$86.0669
13116	C/KELV N405T J WHWH V802	EA	CAXP	G	189	$1,669.75	$13,734.60	$0.00	$624.18	$16,028.53	$84.8070
13117	C/KELV N400H J WHWH V802	EA	CAXP	G	10	$88.36	$854.77	$0.00	$33.03	$976.16	$97.6160
13118	C/KELV N375T J ALAL V802	EA	CAXP	G	492	$4,346.66	$34,976.00	$0.00	$1,624.85	$40,947.51	$83.2266
13119	C/KELV N395B J ALAL V802	EA	CAXP	G	325	$2,871.27	$24,027.15	$0.00	$1,073.33	$27,971.75	$86.0669

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	INVENG1/2 COSTS	INVENG3/4 COSTS	INVENG5/6 COSTS	INVENG7/8 COSTS	TOTAL COSTS	COST PER UNIT
13121	C/KELV N400H J ALAL V802	EA	CAXP	G	869	$7,677.33	$74,280.05	$0.00	$2,869.91	$84,827.29	$97.6148
13122	C/KELV F160 J WHWH V802	EA	CAXP	G	214	$1,890.63	$17,491.34	$0.00	$945.99	$20,327.96	$94.9905
13123	C/KELV F230 J WHWH V802	EA	CAXP	G	81	$715.61	$4,313.49	$0.00	$358.06	$5,387.16	$66.5081
13124	C/KELV F310 J WHWH V802	EA	CAXP	G	500	$4,417.34	$25,248.60	$0.00	$1,651.27	$31,317.21	$62.6344
13125	C/FRIG F160 J WHWH V802	EA	CAXP	G	100	$883.46	$8,173.53	$0.00	$442.05	$9,499.04	$94.9904
13126	C/FRIG F230 J WHWH V802	EA	CAXP	G	21	$185.53	$1,118.31	$0.00	$92.83	$1,396.67	$66.5081
13127	C/FRIG F310 J WHWH V802	EA	CAXP	G	47	$415.23	$2,373.37	$0.00	$155.22	$2,943.82	$62.6345
13128	C/KELV C335T J WHWH V802	EA	CAXP	G	1560	$13,782.10	$97,695.70	$0.00	$5,151.97	$116,629.77	$74.7627
13129	C/KELV C390T J WHWH V802	EA	CAXP	G	495	$4,373.17	$32,497.77	$0.00	$1,634.76	$38,505.70	$77.7893
13130	C/LEON C335T J WHWH V802	EA	CAXP	G	20	$176.68	$1,252.51	$0.00	$66.05	$1,495.24	$74.7620
13135	C/LEON C335T J ALAL V802	EA	CAXP	G	264	$2,332.35	$16,533.11	$0.00	$871.87	$19,737.33	$74.7626
13140	C/KELV C370 J WHWH V802	EA	CAXP	G	9	$79.51	$457.54	$0.00	$29.72	$566.77	$62.9744
13142	C/LEON F310 J WHWH V802	EA	CAXP	G	3	$26.50	$151.49	$0.00	$9.87	$187.86	$62.6200
13143	C/FRIG P190 J WHWH V802	EA	CAXP	G	9	$79.59	$360.46	$0.00	$39.77	$479.82	$53.3133
13144	C/FRIG C420T J WHWH V802	EA	CAXP	G	10	$88.36	$659.38	$0.00	$33.03	$780.77	$78.0770
13145	C/KELV F310 J WHWH V810	EA	CAXP	G	35	$309.22	$1,767.40	$0.00	$115.59	$2,192.21	$62.6346
13146	C/KELV C250T J WHWH V802	EA	CAXP	G	1410	$12,456.89	$141,569.71	$0.00	$6,232.95	$160,259.55	$113.6593
13147	C/LEON C170T J WHWH V802	EA	CAXP	G	18	$159.03	$965.17	$0.00	$79.57	$1,203.77	$66.8761
13148	C/LEON C390T J WHWH V802	EA	CAXP	G	6	$53.01	$393.91	$0.00	$19.82	$466.74	$77.7900
13149	C/LEON C410B J WHWH V802	EA	CAXP	G	8	$70.67	$522.47	$0.00	$26.42	$619.56	$77.4450
13150	C/SHACK P190 J WHWH V802	EA	CAXP	G	41	$362.22	$1,641.49	$0.00	$181.24	$2,184.95	$53.2915
13151	C/KELV P120 J WHWH V803	EA	CAXP	G	40	$353.39	$1,404.23	$0.00	$176.82	$1,934.44	$48.3610
13152	C/LEON C250T J WHWH V802	EA	CAXP	G	8	$70.67	$803.23	$0.00	$35.36	$909.26	$113.6575
13153	C/KELV F160 J WHWH V803	EA	CAXP	G	19	$167.85	$1,552.97	$0.00	$83.99	$1,804.81	$94.9900
13154	C/KELV N405T J WHWH V803	EA	CAXP	G	377	$3,330.68	$27,396.52	$0.00	$1,245.06	$31,972.26	$84.8071
13155	C/KELV N395B J WHWH V803	EA	CAXP	G	98	$865.80	$7,245.11	$0.00	$323.65	$8,434.56	$86.0669
13157	C/KELV C335T J WHWH V803	EA	CAXP	G	112	$989.48	$7,014.05	$0.00	$369.89	$8,373.42	$74.7627
13158	C/SHACK P120 H WWWW V802	EA	CAXP	G	84	$742.11	$2,948.87	$0.00	$371.32	$4,062.30	$48.3607
13159	C/SHACK C170T H WWWW V802	EA	CAXP	G	124	$1,095.49	$6,648.95	$0.00	$548.15	$8,292.59	$66.8757
13160	C/SHACK C250T H WWWW V802	EA	CAXP	G	108	$954.14	$10,843.63	$0.00	$477.42	$12,275.19	$113.6592
13161	C/SHACK C270 H WWWW V802	EA	CAXP	G	29	$256.21	$1,269.23	$0.00	$128.20	$1,653.64	$57.0221
13162	C/SHACK C335T H WWWW V802	EA	CAXP	G	148	$1,307.53	$9,268.56	$0.00	$488.78	$11,064.87	$74.7626
13163	C/SHACK C370 H WWWW V802	EA	CAXP	G	73	$644.93	$3,711.11	$0.00	$241.09	$4,597.13	$62.9744
13164	C/SHACK C380B H WWWW V802	EA	CAXP	G	114	$1,007.16	$7,454.70	$0.00	$376.49	$8,838.35	$77.5294
13165	C/SHACK C390T H WWWW V802	EA	CAXP	G	149	$1,316.36	$9,782.15	$0.00	$492.08	$11,590.59	$77.7892
13166	C/SHACK C410B H WWWW V802	EA	CAXP	G	81	$715.61	$5,289.97	$0.00	$267.51	$6,273.09	$77.4456
13167	C/SHACK F230 H WWWW V802	EA	CAXP	G	29	$256.21	$1,544.33	$0.00	$128.20	$1,928.74	$66.5083
13168	C/SHACK F310 H WWWW V802	EA	CAXP	G	140	$1,236.86	$7,069.61	$0.00	$462.36	$8,768.83	$62.6345
13169	C/SHACK N375T H WWWW V802	EA	CAXP	G	497	$4,390.83	$35,331.45	$0.00	$1,641.37	$41,363.65	$83.2267
13170	C/SHACK N395B H WWWW V802	EA	CAXP	G	13	$114.85	$961.08	$0.00	$42.93	$1,118.86	$86.0662
13173	C/FRIG N395B J ALAL V802	EA	CAXP	G	8	$70.67	$591.43	$0.00	$26.42	$688.52	$86.0650
13176	C/SHACK C250T J FAFA V802	EA	CAXP	G	542	$4,788.39	$54,418.99	$0.00	$2,395.93	$61,603.31	$113.6592
13177	C/SHACK C170T J FAFA V802	EA	CAXP	G	262	$2,314.68	$14,048.60	$0.00	$1,158.18	$17,521.46	$66.8758
13179	C/FRIG C380B J WHWH V802	EA	CAXP	G	54	$477.07	$3,531.17	$0.00	$178.34	$4,186.58	$77.5293
13180	C/FRIG C410B J WHWH V802	EA	CAXP	G	36	$318.04	$2,351.10	$0.00	$118.89	$2,788.03	$77.4453
13181	C/KELV C365H J WHWH V802	EA	CAXP	G	37	$326.88	$2,378.82	$0.00	$122.19	$2,827.89	$76.4295
13182	C/KELV C170T J WHWH V803	EA	CAXP	G	51	$450.57	$2,734.65	$0.00	$225.45	$3,410.67	$66.8759
13183	C/KELV C250T J WHWH V803	EA	CAXP	G	48	$424.07	$4,819.39	$0.00	$212.19	$5,455.65	$113.6594
13184	C/SHACK C190 H WWWW V802	EA	CAXP	G	47	$415.23	$1,862.38	$0.00	$207.77	$2,485.38	$52.8804
13186	C/KELV C380B J WHWH V803	EA	CAXP	G	82	$724.43	$5,362.15	$0.00	$270.81	$6,357.39	$77.5291
13187	C/KELV N375T J WHWH V803	EA	CAXP	G	492	$4,346.66	$34,976.00	$0.00	$1,624.85	$40,947.51	$83.2266
13188	C/KELV C410B J WHWH V803	EA	CAXP	G	54	$477.07	$3,526.65	$0.00	$178.34	$4,182.06	$77.4456
13189	C/KELV N400H J WHWH V803	EA	CAXP	G	435	$3,843.08	$37,182.77	$0.00	$1,436.61	$42,462.46	$97.6149
13190	C/KELV F310 J WHWH V803	EA	CAXP	G	3	$26.50	$151.49	$0.00	$6.89	$184.88	$61.6267

PART NUMBER	DESCRIPTION				UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	INVENG1/2 COSTS	INVENG3/4 COSTS	INVENG5/6 COSTS	INVENG7/8 COSTS	TOTAL COSTS	COST PER UNIT
13191	C/KELV	C420T	J WHWH	V802	EA	CAXP	G	122	$1,077.83	$8,044.48	$0.00	$402.91	$9,525.22	$78.0756
13195	C/LEON	C370	J WHWH	V802	EA	CAXP	G	3	$26.50	$152.52	$0.00	$9.91	$188.93	$62.9767
13198	C/KELV	C190	J WHWH	V802	EA	CAXP	G	181	$1,599.08	$7,172.15	$0.00	$800.12	$9,571.35	$52.8804
13199	C/KELV	C270	J WHWH	V802	EA	CAXP	G	123	$1,086.67	$5,383.30	$0.00	$543.73	$7,013.70	$57.0220
13200	C/SHACK	C420T	H WWWW	V802	EA	CAXP	G	30	$265.04	$1,978.15	$0.00	$99.08	$2,342.27	$78.0757
13201	C/SHACK	N400H	H WWWW	V802	EA	CAXP	G	875	$7,730.34	$74,792.91	$0.00	$2,889.73	$85,412.98	$97.6148
13202	C/SHACK	N395B	J ALAL	V802	EA	CAXP	G	5	$44.18	$369.65	$0.00	$16.51	$430.34	$86.0680
13203	C/SHACK	N405T	J ALAL	V802	EA	CAXP	G	377	$3,330.68	$27,396.52	$0.00	$1,245.06	$31,972.26	$84.8071
13205	C/F&P	N369B	H WWWW		EA	CAFR	G	641	$2,328.37	$46,499.59	$2,534.15	$0.00	$51,362.11	$80.1281
13209	C/KELV	C120	J WHWH	V803	EA	CAXP	G	79	$697.94	$2,962.46	$0.00	$349.22	$4,009.62	$50.7547
13212	C/LEON	C365H	J WHWH	V802	EA	CAXP	G	5	$44.18	$321.46	$0.00	$16.51	$382.15	$76.4300
13215	C/KELV	N375T	J SASA	V802	EA	CAXP	G	369	$3,259.99	$26,232.01	$0.00	$1,218.64	$30,710.64	$83.2267
13216	C/KELV	N395B	J SASA	V802	EA	CAXP	G	263	$2,323.52	$19,443.51	$0.00	$868.57	$22,635.60	$86.0669
13217	C/KELV	N405T	J SASA	V802	EA	CAXP	G	315	$2,782.93	$22,890.99	$0.00	$1,040.30	$26,714.22	$84.8070
13218	C/KELV	N400H	J SASA	V802	EA	CAXP	G	725	$6,405.14	$61,971.27	$0.00	$2,394.35	$70,770.76	$97.6148
13220	C/FRIG	N395B	J SASA	V802	EA	CAXP	G	12	$106.01	$887.15	$0.00	$39.63	$1,032.79	$86.0658
13223	C/LEON	C380B	J WHWH	V802	EA	CAXP	G	6	$53.01	$392.36	$0.00	$19.82	$465.19	$77.5317
13226	C/SHACK	F230	H WWWW	V803	EA	CAXP	G	16	$141.36	$852.05	$0.00	$70.73	$1,064.14	$66.5088
13227	C/FRIG	C190	J WHWH	V802	EA	CAXP	G	17	$150.19	$673.63	$0.00	$75.15	$898.97	$52.8806
13228	C/KELV	N375T	J WHWH	V814	EA	CAXP	G	39	$344.55	$2,772.49	$0.00	$128.80	$3,245.84	$83.2267
13229	C/KELV	N405T	J WHWH	V814	EA	CAXP	G	3	$26.50	$218.01	$0.00	$9.91	$254.42	$84.8067
13230	C/KELV	N400H	J WHWH	V814	EA	CAXP	G	46	$406.40	$3,931.97	$0.00	$151.92	$4,490.29	$97.6150
13231	C/KELV	N375T	J ALAL	V814	EA	CAXP	G	35	$309.22	$2,488.13	$0.00	$115.59	$2,912.94	$83.2269
13232	C/KELV	N405T	J ALAL	V814	EA	CAXP	G	2	$17.67	$145.34	$0.00	$6.61	$169.62	$84.8100
13233	C/KELV	N400H	J ALAL	V814	EA	CAXP	G	45	$397.56	$3,846.49	$0.00	$148.61	$4,392.66	$97.6147
13234	C/KELV	N375T	J SASA	V814	EA	CAXP	G	15	$132.52	$1,066.34	$0.00	$49.54	$1,248.40	$83.2267
13235	C/KELV	N405T	J SASA	V814	EA	CAXP	G	2	$17.67	$145.34	$0.00	$6.61	$169.62	$84.8100
13236	C/KELV	N400H	J SASA	V814	EA	CAXP	G	17	$150.19	$1,453.12	$0.00	$56.14	$1,659.45	$97.6147
13242	C/FRIG	N400H	J ALAL	V814	EA	CAXP	G	12	$106.01	$1,025.73	$0.00	$39.63	$1,171.37	$97.6142
13245	C/FRIG	N400H	J SASA	V814	EA	CAXP	G	18	$159.03	$1,538.60	$0.00	$59.45	$1,757.08	$97.6156
13248	C/LEON	N375T	J ALAL	V814	EA	CAXP	G	50	$441.74	$3,554.47	$0.00	$165.13	$4,161.34	$83.2268
13252	C/LEON	C250T	J FAFA	V802	EA	CAXP	G	30	$265.04	$3,012.12	$0.00	$132.62	$3,409.78	$113.6593
13253	C/LEON	C335T	J SASA	V802	EA	CAXP	G	152	$1,342.87	$9,519.06	$0.00	$501.99	$11,363.92	$74.7626
13254	C/LEON	N400H	J SASA	V814	EA	CAXP	G	45	$397.56	$3,846.49	$0.00	$148.61	$4,392.66	$97.6147
13255	C/LEON	N375T	J SASA	V814	EA	CAXP	G	45	$397.56	$3,199.03	$0.00	$148.61	$3,745.20	$83.2267
13257	C/KELV	F310	J ALAL	V802	EA	CAXP	G	5	$44.18	$252.49	$0.00	$11.49	$308.16	$61.6320
13258	C/SHACK	N395B	J SASA	V802	EA	CAXP	G	5	$44.18	$369.65	$0.00	$16.51	$430.34	$86.0680
13259	C/SHACK	N375T	H WWWW	V814	EA	CAXP	G	5	$44.18	$355.45	$0.00	$16.51	$416.14	$83.2280
13260	C/SHACK	N405T	H WWWW	V814	EA	CAXP	G	8	$70.67	$581.36	$0.00	$26.42	$678.45	$84.8063
13261	C/SHACK	N400H	H WWWW	V814	EA	CAXP	G	8	$70.67	$683.82	$0.00	$26.42	$780.91	$97.6138
13262	C/SHACK	N375T	J ALAL	V814	EA	CAXP	G	2	$17.67	$142.18	$0.00	$6.61	$166.46	$83.2300
13263	C/SHACK	N405T	J ALAL	V814	EA	CAXP	G	6	$53.01	$436.01	$0.00	$19.82	$508.84	$84.8067
13264	C/SHACK	N400H	J ALAL	V814	EA	CAXP	G	6	$53.01	$512.86	$0.00	$19.82	$585.69	$97.6150
13265	C/SHACK	N375T	J SASA	V814	EA	CAXP	G	3	$26.50	$213.27	$0.00	$9.91	$249.68	$83.2267
13266	C/SHACK	N405T	J SASA	V814	EA	CAXP	G	6	$53.01	$436.01	$0.00	$19.82	$508.84	$84.8067
13267	C/SHACK	N400H	J SASA	V814	EA	CAXP	G	6	$53.01	$512.86	$0.00	$19.82	$585.69	$97.6150
15352	C/F&P	N375T	H WWWW		EA	CAFP	G	225	$817.29	$15,995.13	$889.52	$0.00	$17,701.94	$78.6753
15354	C/F&P	N400H	H WWWW		EA	CAFP	G	218	$791.86	$18,634.12	$861.85	$0.00	$20,287.83	$93.0634
15355	C/F&P	N395B	H WWWW		EA	CAFP	G	666	$2,419.18	$49,237.16	$2,632.99	$0.00	$54,289.33	$81.5155
15811	C/F&P	C365H	H WWWW	V812	EA	CAAU	G	310	$2,738.75	$19,930.66	$0.00	$1,023.79	$23,693.20	$76.4297
15813	C/SHACK	C365H	J WHWH		EA	CASH	G	427	$1,551.03	$27,452.87	$1,688.12	$0.00	$30,692.02	$71.8783
15814	C/F&P	H160E	J WHWH	V812	EA	CAAU	G	1637	$14,462.36	$142,346.10	$0.00	$3,761.94	$160,570.40	$98.0882
15815	C/F&P	H220E	J WHWH	V812	EA	CAAU	G	1089	$9,620.96	$96,930.91	$0.00	$2,502.60	$109,054.47	$100.1418
15816	C/F&P	H360E	J WHWH	V812	EA	CAAU	G	952	$8,410.61	$92,573.72	$0.00	$2,187.76	$103,172.09	$108.3740

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	INVENG1/2 COSTS	INVENG3/4 COSTS	INVENG5/6 COSTS	INVENG7/8 COSTS	TOTAL COSTS	COST PER UNIT
15817	C/F&P H510E J WHWH V812	EA	CAAU	G	485	$4,284.81	$53,585.10	$0.00	$1,114.56	$58,984.47	$121.6175
15818	C/F&P H701E J WHWH V812	EA	CAAU	G	457	$4,037.45	$54,180.83	$0.00	$1,050.22	$59,268.50	$129.6904
15823	C/F&P H160S J WHWH V812	EA	CAAU	G	2126	$18,782.52	$184,867.33	$0.00	$4,885.70	$208,535.55	$98.0882
15824	C/F&P H220S J WHWH V812	EA	CAAU	G	1124	$9,930.17	$100,046.22	$0.00	$2,583.03	$112,559.42	$100.1418
15825	C/F&P H360S J WHWH V812	EA	CAAU	G	948	$8,375.26	$92,184.76	$0.00	$2,178.57	$102,738.59	$108.3740
15826	C/FRIG F310 J SASA	EA	CAFR	G	129	$468.58	$6,514.14	$509.99	$0.00	$7,492.71	$58.0830
15827	C/FRIG C370 J SASA	EA	CAFR	G	167	$606.61	$8,489.80	$660.22	$0.00	$9,756.63	$58.4229
15828	C/FRIG C365H J SASA	EA	CAFR	G	42	$152.56	$2,700.28	$166.04	$0.00	$3,018.88	$71.8781
15829	C/FRIG C335T J SASA	EA	CAFR	G	20	$72.64	$1,252.51	$79.07	$0.00	$1,404.22	$70.2110
15830	C/FRIG C390T J SASA	EA	CAFR	G	6	$21.80	$393.91	$23.72	$0.00	$439.43	$73.2383
15831	C/FRIG C380B J SASA	EA	CAFR	G	325	$1,180.53	$21,252.44	$1,284.87	$0.00	$23,717.84	$72.9780
15834	C/FRIG C410B J SASA	EA	CAFR	G	11	$39.96	$718.39	$43.49	$0.00	$801.84	$72.8945
15836	C/KELV C365H J SASA	EA	CAKE	G	68	$247.01	$4,371.88	$268.83	$0.00	$4,887.72	$71.8782
15837	C/KELV C390T J SASA	EA	CAKE	G	8	$29.05	$525.22	$31.63	$0.00	$585.90	$73.2375
15840	C/KELV C410B J SASA	EA	CAKE	G	17	$61.75	$1,110.24	$67.21	$0.00	$1,239.20	$72.8941
15842	C/F&P F310 J WHWH V812	EA	CAAU	G	2376	$20,991.19	$119,981.36	$0.00	$7,846.85	$148,819.40	$62.6344
15843	C/F&P C370 J WHWH V812	EA	CAAU	G	2807	$24,798.93	$142,699.91	$0.00	$9,270.25	$176,769.09	$62.9744
15844	C/F&P C365H J WHWH V812	EA	CAAU	G	547	$4,832.57	$35,167.97	$0.00	$1,806.49	$41,807.03	$76.4297
15845	C/F&P C335T J WHWH V812	EA	CAAU	G	1827	$16,140.95	$114,416.69	$0.00	$6,033.75	$136,591.39	$74.7627
15847	C/F&P C390T J WHWH V812	EA	CAAU	G	2501	$22,095.53	$164,195.78	$0.00	$8,259.67	$194,550.98	$77.7893
15848	C/F&P N375T J WHWH V812	EA	CAAU	G	1894	$16,732.87	$134,643.38	$0.00	$6,255.02	$157,631.27	$83.2266
15849	C/F&P C380B J WHWH V812	EA	CAAU	G	1838	$16,238.14	$120,190.73	$0.00	$6,070.08	$142,498.95	$77.5294
15850	C/F&P C420T J WHWH V812	EA	CAAU	G	2011	$17,766.52	$132,602.02	$0.00	$6,641.42	$157,009.96	$78.0756
15852	C/F&P N405T J WHWH V812	EA	CAAU	G	1410	$12,456.89	$102,464.44	$0.00	$4,656.59	$119,577.92	$84.8070
15853	C/F&P C415H J WHWH V812	EA	CAAU	G	792	$6,997.07	$61,645.30	$0.00	$2,615.62	$71,257.99	$89.9722
15854	C/F&P N400H J WHWH V812	EA	CAAU	G	727	$6,422.80	$62,142.23	$0.00	$2,400.95	$70,965.98	$97.6148
15855	C/F&P C410B J WHWH V812	EA	CAAU	G	3548	$31,345.43	$231,713.72	$0.00	$11,717.44	$274,776.59	$77.4455
15856	C/F&P N395B J WHWH V812	EA	CAAU	G	4513	$39,870.88	$333,644.62	$0.00	$14,904.39	$388,419.89	$86.0669
15857	C/F&P P190 J WHWH V812	EA	CAAU	G	112	$989.48	$4,484.05	$0.00	$495.10	$5,968.63	$53.2913
15858	C/F&P C190 J WHWH V812	EA	CAAU	G	667	$5,892.73	$26,429.99	$0.00	$2,948.50	$35,271.22	$52.8804
15859	C/F&P F160 J WHWH V812	EA	CAAU	G	832	$7,350.44	$68,003.73	$0.00	$3,677.89	$79,032.06	$94.9905
15860	C/F&P C170T J WHWH V812	EA	CAAU	G	1090	$9,629.80	$58,446.45	$0.00	$4,818.38	$72,894.63	$66.8758
15861	C/F&P C270 J WHWH V812	EA	CAAU	G	1997	$17,642.85	$87,401.96	$0.00	$8,827.81	$113,872.62	$57.0218
15862	C/F&P F230 J WHWH V812	EA	CAAU	G	1752	$15,478.35	$93,299.17	$0.00	$7,744.78	$116,522.30	$66.5082
15863	C/F&P C250T J WHWH V812	EA	CAAU	G	1977	$17,466.15	$198,498.82	$0.00	$8,739.40	$224,704.37	$113.6593
15864	C/F&P C240B J WHWH V812	EA	CAAU	G	2137	$18,879.70	$124,994.19	$0.00	$9,446.68	$153,320.57	$71.7457
15865	C/FRIG C389T J WHWH	EA	CAFR	G	68	$247.01	$4,464.34	$268.83	$0.00	$4,980.18	$73.2379
15866	C/KELV C389T J WHWH	EA	CAKE	G	109	$395.94	$7,156.08	$430.92	$0.00	$7,982.94	$73.2380
15867	C/SHACK C370 J WH	EA	CASH	G	40	$145.30	$2,033.49	$158.14	$0.00	$2,336.93	$58.4233
15869	C/SHACK F310 J WH	EA	CASH	G	20	$72.64	$1,009.94	$79.07	$0.00	$1,161.65	$58.0825
15870	C/SHACK H360 J WH	EA	CASH	G	35	$127.14	$3,403.45	$0.00	$197.18	$3,727.77	$106.5077
15871	C/SHACK H510 J WH	EA	CASH	G	5	$18.17	$552.43	$0.00	$28.17	$598.77	$119.7540
15872	C/F&P N369B H WWWW V812	EA	CAAU	G	1449	$12,801.45	$105,113.74	$0.00	$4,785.39	$122,700.58	$84.6795
15873	C/SHACK C120 J WH	EA	CASH	G	104	$377.77	$3,899.94	$455.63	$0.00	$4,733.34	$45.5129
15874	C/F&P P120 J WHWH V812	EA	CAAU	G	168	$1,484.23	$5,897.74	$0.00	$742.65	$8,124.62	$48.3608
15875	C/KELV N369B J SASA	EA	CAKE	G	180	$653.83	$13,057.61	$711.62	$0.00	$14,423.06	$80.1281
15876	C/FRIG N369B J SASA	EA	CAFR	G	120	$435.89	$8,705.07	$474.41	$0.00	$9,615.37	$80.1281
NH360S	M/SANDEN H360	EA	C800S	G	1264	$4,591.35	$173,695.19	$0.00	$7,120.84	$185,407.38	$146.6831
UNALLH	UNALLOCATED HF M/S PARTS NO'S	EA	CAHFH	G	1400	$5,085.35	$92,313.69	$0.00	$7,887.01	$105,286.05	$75.2043
UNALLR	UNALLOCATED RF M/S PARTS NO'S	EA	CARFR	G	2352	$8,543.40	$155,087.00	$9,298.49	$0.00	$172,928.89	$73.5242
					201436	$1,194,589.00	$14,073,426.00	$396,389.00	$376,742.00	$16,041,146.00	

PART NUMBER	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS.	COMM CODE	SOURCE CODE	FCAST USAGE	ADMIN 3 COSTS	ADMIN 3 TRX	ADMIN 4 COST	ADMIN 4 TRX	SYS 2 COSTS	STORE 6 COSTS	STORE 7 COSTS	TOTAL COSTS
12500	C/KELV H160SL J WHWH V802	E	EA	CAXP	G	42	$239.56	42	$0.00	0	$57.19	$17.96	$56.35	$371.06
12501	C/KELV H220SL J WHWH V802	E	EA	CAXP	G	15	$85.56	15	$0.00	0	$20.42	$6.41	$20.13	$132.52
12502	C/KELV H360SL J WHWH V802	E	EA	CAXP	G	15	$85.56	15	$0.00	0	$20.42	$6.41	$20.13	$132.52
12503	C/KELV H510SL J WHWH V802	E	EA	CAXP	G	8	$45.63	8	$0.00	0	$10.89	$3.42	$10.73	$70.67
12504	C/KELV H701SL J WHWH V802	E	EA	CAXP	G	9	$51.33	9	$0.00	0	$12.25	$3.85	$12.08	$79.51
12505	C/KELV H220EL J WHWH V802	E	EA	CAXP	G	174	$992.45	174	$0.00	0	$236.93	$74.40	$233.46	$1,537.24
12506	C/KELV H360EL J WHWH V802	E	EA	CAXP	G	200	$1,140.74	200	$0.00	0	$272.33	$85.52	$268.34	$1,766.93
12508	C/KELV H510EL J WHWH V802	E	EA	CAXP	G	130	$741.48	130	$0.00	0	$177.01	$55.59	$174.42	$1,148.50
12509	C/KELV H701EL J WHWH V802	E	EA	CAXP	G	5	$28.52	5	$0.00	0	$6.81	$2.14	$6.71	$44.18
12512	C/KELV H360EL J WHWH V810	E	EA	CAXP	G	287	$1,636.97	287	$0.00	0	$390.79	$122.72	$385.07	$2,535.55
12515	C/SHARP H160EL J WHWH V810	E	EA	CAXP	G	576	$3,285.34	576	$0.00	0	$784.30	$246.30	$772.83	$5,088.77
12516	C/SHARP H220EL J WHWH V810	E	EA	CAXP	G	4265	$24,326.35	4265	$0.00	0	$5,807.39	$1,823.76	$5,722.40	$37,679.90
12518	C/SHACK H220SL J WHWH V810	E	EA	CAXP	G	3494	$19,928.79	3494	$0.00	0	$4,757.56	$1,494.07	$4,687.94	$30,868.36
12519	C/SHACK H360SL J WHWH V810	E	EA	CAXP	G	1428	$8,144.91	1428	$0.00	0	$1,944.42	$610.63	$1,915.96	$12,615.92
12520	C/SHACK H510SL J WHWH V810	E	EA	CAXP	G	1021	$5,823.49	1021	$0.00	0	$1,390.23	$436.59	$1,369.89	$9,020.20
12521	C/SHACK H701SL J WHWH V810	E	EA	CAXP	G	1175	$6,701.87	1175	$0.00	0	$1,599.93	$502.44	$1,576.51	$10,380.75
12522	C/SHACK H701SL J WHWH V802	E	EA	CAXP	G	881	$5,024.97	881	$0.00	0	$1,199.60	$376.72	$1,182.05	$7,783.34
12524	C/SHACK H220SL J WHWH V802	E	EA	CAXP	G	697	$3,975.49	697	$0.00	0	$949.06	$298.04	$935.17	$6,157.76
12525	C/SHACK H360SL J WHWH V802	E	EA	CAXP	G	766	$4,369.05	766	$0.00	0	$1,043.02	$327.55	$1,027.75	$6,767.37
12526	C/SHACK H510SL J WHWH V802	E	EA	CAXP	G	489	$2,789.12	489	$0.00	0	$665.84	$209.10	$656.10	$4,320.16
12527	C/SHARP H360EL J WHWH V810	E	EA	CAXP	G	659	$3,758.75	659	$0.00	0	$897.32	$281.79	$884.19	$5,822.05
12528	C/SHACK H160SL J WHWH V803	E	EA	CAXP	G	127	$724.37	127	$0.00	0	$172.93	$54.31	$170.40	$1,122.01
12530	C/SHACK H360SL J WHWH V803	E	EA	CAXP	G	536	$3,057.19	536	$0.00	0	$729.84	$229.20	$719.16	$4,735.39
12531	C/SHACK H701SL J WHWH V803	E	EA	CAXP	G	104	$593.19	104	$0.00	0	$141.61	$44.47	$139.54	$918.81
12532	C/SHACK H510SL J WHWH V803	E	EA	CAXP	G	147	$838.45	147	$0.00	0	$200.16	$62.86	$197.23	$1,298.70
12533	C/KELV H510SL J WHWH V803	E	EA	CAXP	G	3	$17.11	3	$0.00	0	$4.08	$1.28	$4.03	$26.50
12534	C/KELV H360SL J WHWH V803	E	EA	CAXP	G	6	$34.22	6	$0.00	0	$8.17	$2.57	$8.05	$53.01
12535	C/KELV H220SL J WHWH V803	E	EA	CAXP	G	272	$1,551.41	272	$0.00	0	$370.37	$116.31	$364.95	$2,403.04
12536	C/KELV H160SL J WHWH V803	E	EA	CAXP	G	43	$245.26	43	$0.00	0	$58.55	$18.39	$57.69	$379.89
12537	C/KELV H220EL J WHWH V803	E	EA	CAXP	G	23	$131.19	23	$0.00	0	$31.32	$9.84	$30.86	$203.21
12538	C/KELV H360EL J WHWH V803	E	EA	CAXP	G	38	$216.74	38	$0.00	0	$51.74	$16.25	$50.99	$335.72
12539	C/KELV H510EL J WHWH V803	E	EA	CAXP	G	16	$91.26	16	$0.00	0	$21.79	$6.84	$21.47	$141.36
12540	C/FRIG H360EL J WHWH V813	E	EA	CAXP	G	96	$547.56	96	$0.00	0	$130.72	$41.05	$128.80	$848.13
12541	C/FRIG H510EL J WHWH V813	E	EA	CAXP	G	41	$233.85	41	$0.00	0	$55.83	$17.53	$55.01	$362.22
12542	C/FRIG H701EL J WHWH V813	E	EA	CAXP	G	52	$296.59	52	$0.00	0	$70.81	$22.24	$69.77	$459.41
12545	C/KELV H701SL J WHWH V803	E	EA	CAXP	G	5	$28.52	5	$0.00	0	$6.81	$2.14	$6.71	$44.18
12552	C/KELV H160EL J WHWH V802	E	EA	CAXP	G	2	$11.41	2	$0.00	0	$2.72	$0.86	$2.68	$17.67
12854	C/FRIG F310 J WHWH	L	EA	CAFR	G	1228	$0.00	0	$615.76	1228	$1,672.09	$525.10	$1,647.62	$4,460.57
12855	C/FRIG C370 J WHWH	L	EA	CAFR	G	1656	$0.00	0	$830.38	1656	$2,254.87	$708.12	$2,221.87	$6,015.24
12856	C/FRIG C365H J WHWH	L	EA	CAFR	G	429	$0.00	0	$215.12	429	$584.14	$183.44	$575.59	$1,558.29
12857	C/FRIG C335T J WHWH	L	EA	CAFR	G	1610	$0.00	0	$807.31	1610	$2,192.24	$688.45	$2,160.16	$5,848.16
12859	C/FRIG C390T J WHWH	L	EA	CAFR	G	636	$0.00	0	$318.91	636	$866.00	$271.96	$853.33	$2,310.20
12860	C/FRIG N375T J SASA	L	EA	CAFR	G	8	$0.00	0	$4.01	8	$10.89	$3.42	$10.73	$29.05
12861	C/FRIG C380B J WHWH	L	EA	CAFR	G	3062	$0.00	0	$1,535.40	3062	$4,169.34	$1,309.34	$4,108.32	$11,122.40
12865	C/FRIG N400H J SASA	L	EA	CAFR	G	8	$0.00	0	$4.01	8	$10.89	$3.42	$10.73	$29.05
12866	C/FRIG C410B J WHWH	L	EA	CAFR	G	913	$0.00	0	$457.81	913	$1,243.18	$390.41	$1,224.98	$3,316.38
12867	C/FRIG N395B J SASA	L	EA	CAFR	G	203	$0.00	0	$101.79	203	$276.41	$86.80	$272.37	$737.37
12868	C/KELV F310 J SASA	L	EA	CAKE	G	201	$0.00	0	$100.79	201	$273.69	$85.95	$269.68	$730.11
12869	C/KELV C370 J SASA	L	EA	CAKE	G	275	$0.00	0	$137.89	275	$374.45	$117.59	$368.97	$998.90
12870	C/KELV C365H J WHWH	L	EA	CAKE	G	690	$0.00	0	$345.99	690	$939.53	$295.05	$925.78	$2,506.35
12871	C/KELV C335T J SASA	L	EA	CAKE	G	30	$0.00	0	$15.04	30	$40.85	$12.83	$40.25	$108.97
12873	C/KELV C390T J WHWH	L	EA	CAKE	G	1030	$0.00	0	$516.48	1030	$1,402.49	$440.44	$1,381.96	$3,741.37
12874	C/KELV N375T J SASA	L	EA	CAKE	G	12	$0.00	0	$6.02	12	$16.34	$5.13	$16.10	$43.59

PART NUMBER	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS.	COMM CODE	SOURCE CODE	FCAST USAGE	ADMIN 3 COSTS	ADMIN 3 TRX	ADMIN 4 COST	ADMIN 4 TRX	SYS 2 COSTS	STORE 6 COSTS	STORE 7 COSTS	TOTAL COSTS
12875	C/KELV C380B J SASA	L	EA	CAKE	G	532	$0.00	0	$266.76	532	$724.39	$227.49	$713.79	$1,932.43
12879	C/KELV N400H J SASA	L	EA	CAKE	G	14	$0.00	0	$7.02	14	$19.06	$5.99	$18.78	$50.85
12880	C/KELV C410B J WHWH	L	EA	CAKE	G	1482	$0.00	0	$743.13	1482	$2,017.95	$633.72	$1,988.42	$5,383.22
12881	C/KELV N395B J SASA	L	EA	CAKE	G	377	$0.00	0	$189.04	377	$513.34	$161.21	$505.83	$1,369.42
12882	C/SHACK F310 J WHWH	L	EA	CASH	G	1216	$0.00	0	$609.75	1216	$1,655.75	$519.97	$1,631.52	$4,416.99
12883	C/SHACK C370 J WHWH	L	EA	CASH	G	1898	$0.00	0	$951.73	1898	$2,584.39	$811.60	$2,546.57	$6,894.29
12884	C/FRIG N375T J WHWH	L	EA	CAFR	G	686	$0.00	0	$343.99	686	$934.08	$293.34	$920.41	$2,491.82
12885	C/SHACK C335T J WHWH	L	EA	CASH	G	1324	$0.00	0	$663.90	1324	$1,802.81	$566.16	$1,776.43	$4,809.30
12887	C/SHACK C390T J WHWH	L	EA	CASH	G	417	$0.00	0	$209.10	417	$567.80	$178.31	$559.49	$1,514.70
12888	C/SHACK N375T J WHWH	L	EA	CASH	G	372	$0.00	0	$186.53	372	$506.53	$159.07	$499.12	$1,351.25
12889	C/SHACK C380B J WHWH	L	EA	CASH	G	2313	$0.00	0	$1,159.82	2313	$3,149.47	$989.06	$3,103.38	$8,401.73
12892	C/SHACK N405T J WHWH	L	EA	CASH	G	470	$0.00	0	$235.67	470	$639.97	$200.98	$630.60	$1,707.22
12894	C/FRIG N400H J WHWH	L	EA	CAFR	G	838	$0.00	0	$420.20	838	$1,141.05	$358.34	$1,124.35	$3,043.94
12895	C/SHACK C410B J WHWH	L	EA	CASH	G	821	$0.00	0	$411.68	821	$1,117.91	$351.07	$1,101.55	$2,982.21
12896	C/SHACK N395B J WHWH	L	EA	CASH	G	1085	$0.00	0	$544.06	1085	$1,477.38	$463.96	$1,455.76	$3,941.16
12905	C/F&P C415H H WWWW V812	E	EA	CAAU	G	489	$2,789.12	489	$0.00	0	$665.84	$209.10	$656.10	$4,320.16
12906	C/F&P N395B H WWWW V812	E	EA	CAAU	G	1355	$7,728.54	1355	$0.00	0	$1,845.02	$579.41	$1,818.02	$11,970.99
12913	C/F&P N375T H WWWW V812	E	EA	CAAU	G	421	$2,401.26	421	$0.00	0	$573.25	$180.02	$564.86	$3,719.39
12914	C/F&P N405T H WWWW V812	E	EA	CAAU	G	413	$2,355.63	413	$0.00	0	$562.36	$176.60	$554.13	$3,648.72
12915	C/F&P N400H H WWWW V812	E	EA	CAAU	G	209	$1,192.08	209	$0.00	0	$284.58	$89.37	$280.42	$1,846.45
12953	C/FRIG N395B J WHWH	L	EA	CAFR	G	1817	$0.00	0	$911.11	1817	$2,474.10	$776.97	$2,437.89	$6,600.07
12954	C/KELV F310 J WHWH	L	EA	CAKE	G	1931	$0.00	0	$968.27	1931	$2,629.32	$825.71	$2,590.84	$7,014.14
12955	C/KELV C370 J WHWH	L	EA	CAKE	G	2705	$0.00	0	$1,356.38	2705	$3,683.23	$1,156.68	$3,629.33	$9,825.62
12956	C/KELV C335T J WHWH	L	EA	CAKE	G	2607	$0.00	0	$1,307.24	2607	$3,549.79	$1,114.78	$3,497.84	$9,469.65
12957	C/KELV N375T J WHWH	L	EA	CAKE	G	1115	$0.00	0	$559.10	1115	$1,518.23	$476.78	$1,496.01	$4,050.12
12958	C/KELV C380B J WHWH	L	EA	CAKE	G	4986	$0.00	0	$2,500.16	4986	$6,789.13	$2,132.06	$6,689.77	$18,111.12
12960	C/KELV N400H J WHWH	L	EA	CAKE	G	1375	$0.00	0	$689.47	1375	$1,872.25	$587.96	$1,844.85	$4,994.53
12961	C/KELV N395B J WHWH	L	EA	CAKE	G	3440	$0.00	0	$1,724.94	3440	$4,684.04	$1,470.98	$4,615.49	$12,495.45
12962	C/KELV P120 J WHWH	L	EA	CAKE	G	2156	$0.00	0	$1,081.10	2156	$2,935.69	$921.93	$2,892.73	$7,831.45
12963	C/KELV C190 J WHWH	L	EA	CAKE	G	2205	$0.00	0	$1,105.67	2205	$3,002.41	$942.88	$2,958.47	$8,009.43
12964	C/KELV F160 J WHWH	L	EA	CAKE	G	1397	$0.00	0	$700.51	1397	$1,902.21	$597.37	$1,874.37	$5,074.46
12965	C/KELV C170T J WHWH	L	EA	CAKE	G	3835	$0.00	0	$1,923.01	3835	$5,221.88	$1,639.88	$5,145.46	$13,930.23
12966	C/KELV C270 J WHWH	L	EA	CAKE	G	1339	$0.00	0	$671.42	1339	$1,823.23	$572.57	$1,796.55	$4,863.77
12967	C/KELV C250T J WHWH	L	EA	CAKE	G	1316	$0.00	0	$659.89	1316	$1,791.92	$562.73	$1,765.69	$4,780.23
12968	C/KELV C240B J WHWH	L	EA	CAKE	G	4076	$0.00	0	$2,043.85	4076	$5,550.04	$1,742.94	$5,468.82	$14,805.65
12969	C/KELV F230 J WHWH	L	EA	CAKE	G	1427	$0.00	0	$715.55	1427	$1,943.06	$610.20	$1,914.62	$5,183.43
12970	C/FRIG P120 J WHWH	L	EA	CAFR	G	1327	$0.00	0	$665.41	1327	$1,806.89	$567.44	$1,780.45	$4,820.19
12971	C/FRIG C190 J WHWH	L	EA	CAFR	G	1369	$0.00	0	$686.47	1369	$1,864.08	$585.40	$1,836.80	$4,972.75
12972	C/FRIG F160 J WHWH	L	EA	CAFR	G	927	$0.00	0	$464.83	927	$1,262.24	$396.39	$1,243.77	$3,367.23
12973	C/FRIG C170T J WHWH	L	EA	CAFR	G	2324	$0.00	0	$1,165.34	2324	$3,164.45	$993.77	$3,118.14	$8,441.70
12975	C/FRIG C270 J WHWH	L	EA	CAFR	G	804	$0.00	0	$403.15	804	$1,094.76	$343.80	$1,078.74	$2,920.45
12976	C/FRIG C250T J WHWH	L	EA	CAFR	G	788	$0.00	0	$395.13	788	$1,072.97	$336.96	$1,057.27	$2,862.33
12977	C/FRIG C240B J WHWH	L	EA	CAFR	G	2512	$0.00	0	$1,259.61	2512	$3,420.44	$1,074.16	$3,370.38	$9,124.59
12978	C/FRIG F230 J WHWH	L	EA	CAFR	G	973	$0.00	0	$487.90	973	$1,324.87	$416.06	$1,305.49	$3,534.32
12980	C/SHACK P120 J WHWH	L	EA	CASH	G	779	$0.00	0	$390.62	779	$1,060.72	$333.11	$1,045.19	$2,829.64
12981	C/SHACK C190 J WHWH	L	EA	CASH	G	1089	$0.00	0	$546.06	1089	$1,482.82	$465.67	$1,461.12	$3,955.67
12982	C/SHACK F160 J WHWH	L	EA	CASH	G	581	$0.00	0	$291.33	581	$791.11	$248.44	$779.53	$2,110.41
12983	C/SHACK C170T J WHWH	L	EA	CASH	G	1439	$0.00	0	$721.57	1439	$1,959.40	$615.33	$1,930.72	$5,227.02
12985	C/SHACK C270 J WHWH	L	EA	CASH	G	724	$0.00	0	$363.04	724	$985.83	$309.59	$971.40	$2,629.86
12987	C/SHACK C240B J WHWH	L	EA	CASH	G	1423	$0.00	0	$713.54	1423	$1,937.61	$608.49	$1,909.26	$5,168.90
12988	C/SHACK F230 J WHWH	L	EA	CASH	G	543	$0.00	0	$272.28	543	$739.37	$232.19	$728.55	$1,972.39
12996	C/FRIG H160S J WHWH V802	E	EA	CAXP	G	3	$17.11	3	$0.00	0	$4.08	$1.28	$4.03	$26.50
12997	C/FRIG H220S J WHWH V802	E	EA	CAXP	G	13	$74.15	13	$0.00	0	$17.70	$5.56	$17.44	$114.85

PART NUMBER	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS.	COMM CODE	SOURCE CODE	FCAST USAGE	ADMIN 3 COSTS	ADMIN 3 TRX	ADMIN 4 COST	ADMIN 4 TRX	SYS 2 COSTS	STORE 6 COSTS	STORE 7 COSTS	TOTAL COSTS
12998	C/FRIG H360S J WHWH V802	E	EA	CAXP	G	5	$28.52	5	$0.00	0	$6.81	$2.14	$6.71	$44.18
13002	C/KELV H160S J WHWH V802	E	EA	CAXP	G	5	$28.52	5	$0.00	0	$6.81	$2.14	$6.71	$44.18
13003	C/KELV H220S J WHWH V802	E	EA	CAXP	G	5	$28.52	5	$0.00	0	$6.81	$2.14	$6.71	$44.18
13004	C/KELV H360S J WHWH V802	E	EA	CAXP	G	10	$57.04	10	$0.00	0	$13.62	$4.28	$13.42	$88.36
13005	C/KELV H510S J WHWH V802	E	EA	CAXP	G	16	$91.26	16	$0.00	0	$21.79	$6.84	$21.47	$141.36
13006	C/KELV H701S J WHWH V802	E	EA	CAXP	G	10	$57.04	10	$0.00	0	$13.62	$4.28	$13.42	$88.36
13007	C/SHACK H160S J WHWH V802	E	EA	CAXP	G	24	$136.89	24	$0.00	0	$32.68	$10.26	$32.20	$212.03
13008	C/SHACK H220S J WHWH V802	E	EA	CAXP	G	27	$154.00	27	$0.00	0	$36.76	$11.55	$36.23	$238.54
13009	C/SHACK H360S J WHWH V802	E	EA	CAXP	G	25	$142.59	25	$0.00	0	$34.04	$10.69	$33.54	$220.86
13011	C/SHACK H510S J WHWH V802	E	EA	CAXP	G	14	$79.85	14	$0.00	0	$19.06	$5.99	$18.78	$123.68
13012	C/SHACK H701S J WHWH V802	E	EA	CAXP	G	16	$91.26	16	$0.00	0	$21.79	$6.84	$21.47	$141.36
13013	C/KELV H160E J WHWH	L	EA	CAKE	G	1982	$0.00	0	$993.85	1982	$2,698.77	$847.52	$2,659.27	$7,199.41
13014	C/KELV H220E J WHWH	L	EA	CAKE	G	1892	$0.00	0	$948.72	1892	$2,576.22	$809.04	$2,538.52	$6,872.50
13016	C/KELV H360E J WHWH	L	EA	CAKE	G	2012	$0.00	0	$1,008.89	2012	$2,739.62	$860.35	$2,699.52	$7,308.38
13017	C/KELV H510E J WHWH	L	EA	CAKE	G	518	$0.00	0	$259.74	518	$705.33	$221.50	$695.01	$1,881.58
13018	C/KELV H701E J WHWH	L	EA	CAKE	G	273	$0.00	0	$136.89	273	$371.73	$116.74	$366.29	$991.65
13019	C/SHACK H160E J WHWH	L	EA	CASH	G	320	$0.00	0	$160.46	320	$435.72	$136.84	$429.35	$1,162.37
13020	C/SHACK H220E J WHWH	L	EA	CASH	G	580	$0.00	0	$290.83	580	$789.75	$248.01	$778.19	$2,106.78
13021	C/SHACK H360E J WHWH	L	EA	CASH	G	710	$0.00	0	$356.02	710	$966.76	$303.60	$952.62	$2,579.00
13022	C/SHACK H510E J WHWH	L	EA	CASH	G	301	$0.00	0	$150.93	301	$409.85	$128.71	$403.86	$1,093.35
13023	C/SHACK H701E J WHWH	L	EA	CASH	G	195	$0.00	0	$97.78	195	$265.52	$83.38	$261.63	$708.31
13024	C/FRIG H160E J WHWH	L	EA	CAFR	G	1343	$0.00	0	$673.43	1343	$1,828.68	$574.28	$1,801.92	$4,878.31
13025	C/FRIG H220E J WHWH	L	EA	CAFR	G	1272	$0.00	0	$637.83	1272	$1,732.00	$543.92	$1,706.66	$4,620.41
13026	C/FRIG H360E J WHWH	L	EA	CAFR	G	1390	$0.00	0	$697.00	1390	$1,892.68	$594.38	$1,864.98	$5,049.04
13027	C/FRIG H510E J WHWH	L	EA	CAFR	G	351	$0.00	0	$176.00	351	$477.94	$150.09	$470.94	$1,274.97
13028	C/FRIG H701E J WHWH	L	EA	CAFR	G	185	$0.00	0	$92.77	185	$251.90	$79.11	$248.22	$672.00
13039	C/F&P F310 H WWWW	L	EA	CAFP	G	358	$0.00	0	$179.51	358	$487.47	$153.08	$480.33	$1,300.39
13040	C/F&P C370 H WWWW	L	EA	CAFP	G	371	$0.00	0	$186.03	371	$505.17	$158.64	$497.77	$1,347.61
13041	C/F&P C365H H WWWW	L	EA	CAFP	G	180	$0.00	0	$90.26	180	$245.09	$76.97	$241.51	$653.83
13042	C/F&P C335T H WWWW	L	EA	CAAU	G	322	$0.00	0	$161.46	322	$438.45	$137.69	$432.03	$1,169.63
13043	C/F&P C390T H WWWW	L	EA	CAFP	G	166	$0.00	0	$83.24	166	$226.03	$70.98	$222.72	$602.97
13044	C/F&P C380B H WWWW	L	EA	CAFP	G	1057	$0.00	0	$530.02	1057	$1,439.25	$451.98	$1,418.19	$3,839.44
13047	C/F&P C410B H WWWW	L	EA	CAFP	G	226	$0.00	0	$113.32	226	$307.73	$96.64	$303.23	$820.92
13056	C/FRIG C240B H WWWW V813	E	EA	CAXP	G	144	$821.34	144	$0.00	0	$196.08	$61.58	$193.21	$1,272.21
13065	C/KELV C229 J WHWH	L	EA	CAKE	G	1650	$0.00	0	$827.37	1650	$2,246.70	$705.56	$2,213.82	$5,993.45
13067	C/KELV N369B J WHWH	L	EA	CAKE	G	1689	$0.00	0	$846.93	1689	$2,299.81	$722.23	$2,266.15	$6,135.12
13068	C/FRIG C229 J WHWH	L	EA	CAFR	G	935	$0.00	0	$468.84	935	$1,273.13	$399.82	$1,254.50	$3,396.29
13070	C/FRIG N369B J WHWH	L	EA	CAFR	G	1123	$0.00	0	$563.11	1123	$1,529.12	$480.21	$1,506.74	$4,079.18
13071	C/SHACK C229 J WHWH	L	EA	CASH	G	1224	$0.00	0	$613.76	1224	$1,666.65	$523.39	$1,642.25	$4,446.05
13100	C/KELV P120 J WHWH V802	E	EA	CAXP	G	271	$1,545.71	271	$0.00	0	$369.00	$115.88	$363.60	$2,394.19
13101	C/KELV P190 J WHWH V802	E	EA	CAXP	G	134	$764.30	134	$0.00	0	$182.46	$57.30	$179.79	$1,183.85
13102	C/KELV C170T J WHWH V802	E	EA	CAXP	G	2120	$12,091.88	2120	$0.00	0	$2,886.67	$906.53	$2,844.43	$18,729.51
13103	C/KELV C380B J WHWH V802	E	EA	CAXP	G	299	$1,705.41	299	$0.00	0	$407.13	$127.86	$401.17	$2,641.57
13104	C/KELV C410B J WHWH V802	E	EA	CAXP	G	202	$1,152.15	202	$0.00	0	$275.05	$86.38	$271.03	$1,784.61
13105	C/FRIG P120 J WHWH V802	E	EA	CAXP	G	54	$308.00	54	$0.00	0	$73.53	$23.09	$72.45	$477.07
13106	C/FRIG C170T J WHWH V802	E	EA	CAXP	G	241	$1,374.60	241	$0.00	0	$328.15	$103.05	$323.35	$2,129.15
13107	C/FRIG C250T J WHWH V802	E	EA	CAXP	G	65	$370.74	65	$0.00	0	$88.51	$27.79	$87.21	$574.25
13108	C/FRIG C335T J WHWH V802	E	EA	CAXP	G	116	$661.63	116	$0.00	0	$157.95	$49.60	$155.64	$1,024.82
13109	C/FRIG C390T J WHWH V802	E	EA	CAXP	G	61	$347.93	61	$0.00	0	$83.06	$26.08	$81.84	$538.91
13113	C/FRIG N400H J WHWH V802	E	EA	CAXP	G	3	$17.11	3	$0.00	0	$4.08	$1.28	$4.03	$26.50
13114	C/KELV N375T J WHWH V802	E	EA	CAXP	G	621	$3,542.01	621	$0.00	0	$845.58	$265.55	$833.20	$5,486.34
13115	C/KELV N395B J WHWH V802	E	EA	CAXP	G	372	$2,121.78	372	$0.00	0	$506.53	$159.07	$499.12	$3,286.50
13116	C/KELV N405T J WHWH V802	E	EA	CAXP	G	189	$1,078.00	189	$0.00	0	$257.35	$80.82	$253.58	$1,669.75

PART NUMBER	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS.	COMM CODE	SOURCE CODE	FCAST USAGE	ADMIN 3 COSTS	ADMIN 3 TRX	ADMIN 4 COST	ADMIN 4 TRX	SYS 2 COSTS	STORE 6 COSTS	STORE 7 COSTS	TOTAL COSTS
13117	C/KELV N400H J WHWH V802	E	EA	CAXP	G	10	$57.04	10	$0.00	0	$13.62	$4.28	$13.42	$88.36
13118	C/KELV N375T J ALAL V802	E	EA	CAXP	G	492	$2,806.23	492	$0.00	0	$669.93	$210.38	$660.12	$4,346.66
13119	C/KELV N395B J ALAL V802	E	EA	CAXP	G	325	$1,853.71	325	$0.00	0	$442.53	$138.97	$436.06	$2,871.27
13121	C/KELV N400H J ALAL V802	E	EA	CAXP	G	869	$4,956.53	869	$0.00	0	$1,183.26	$371.59	$1,165.95	$7,677.33
13122	C/KELV F160 J WHWH V802	E	EA	CAXP	G	214	$1,220.60	214	$0.00	0	$291.39	$91.51	$287.13	$1,890.63
13123	C/KELV F230 J WHWH V802	E	EA	CAXP	G	81	$462.00	81	$0.00	0	$110.29	$34.64	$108.68	$715.61
13124	C/KELV F310 J WHWH V802	E	EA	CAXP	G	500	$2,851.86	500	$0.00	0	$680.82	$213.80	$670.86	$4,417.34
13125	C/FRIG F160 J WHWH V802	E	EA	CAXP	G	100	$570.37	100	$0.00	0	$136.16	$42.76	$134.17	$883.46
13126	C/FRIG F230 J WHWH V802	E	EA	CAXP	G	21	$119.78	21	$0.00	0	$28.59	$8.98	$28.18	$185.53
13127	C/FRIG F310 J WHWH V802	E	EA	CAXP	G	47	$268.07	47	$0.00	0	$64.00	$20.10	$63.06	$415.23
13128	C/KELV C335T J WHWH V802	E	EA	CAXP	G	1560	$8,897.80	1560	$0.00	0	$2,124.16	$667.07	$2,093.07	$13,782.10
13129	C/KELV C390T J WHWH V802	E	EA	CAXP	G	495	$2,823.34	495	$0.00	0	$674.01	$211.67	$664.15	$4,373.17
13130	C/LEON C335T J WHWH V802	E	EA	CAXP	G	20	$114.07	20	$0.00	0	$27.23	$8.55	$26.83	$176.68
13135	C/LEON C335T J ALAL V802	E	EA	CAXP	G	264	$1,505.78	264	$0.00	0	$359.47	$112.89	$354.21	$2,332.35
13140	C/KELV C370 J WHWH V802	E	EA	CAXP	G	9	$51.33	9	$0.00	0	$12.25	$3.85	$12.08	$79.51
13142	C/LEON F310 J WHWH V802	E	EA	CAXP	G	3	$17.11	3	$0.00	0	$4.08	$1.28	$4.03	$26.50
13143	C/FRIG P190 J WHWH V802	E	EA	CAXP	G	9	$51.36	9	$0.00	0	$12.36	$3.85	$12.02	$79.59
						134608	$175,777.20	30818	$52,044.03	103790	$183,287.50	$57,559.67	$180,605.08	$649,273.48
APPENDIX No. 7 SOURCE CODE G - 2						66828	$331,733.80	58161	$4,345.97	8667	$90,995.50	$28,576.33	$89,663.92	
						201436	$507,511.00	88979	$56,390.00	112457	$274,283.00	$86,136.00	$270,269.00	$649,273.48

PART NUMBER	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM. CODE	SOURCE CODE	FCAST USAGE	ADMIN 3 COSTS	ADMIN 3 TRX	ADMIN 4 COST	ADMIN 4 TRX	SYS 2 COSTS	STORE 6 COSTS	STORE 7 COSTS	TOTAL COSTS
13144	C/FRIG C420T J WHWH V802	E	EA	CAXP	G	10	$57.04	10	$0.00	0	$13.62	$4.28	$13.42	$88.36
13145	C/KELV F310 J WHWH V810	E	EA	CAXP	G	35	$199.63	35	$0.00	0	$47.66	$14.97	$46.96	$309.22
13146	C/KELV C250T J WHWH V802	E	EA	CAXP	G	1410	$8,042.24	1410	$0.00	0	$1,919.91	$602.93	$1,891.81	$12,456.89
13147	C/LEON C170T J WHWH V802	E	EA	CAXP	G	18	$102.67	18	$0.00	0	$24.51	$7.70	$24.15	$159.03
13148	C/LEON C390T J WHWH V802	E	EA	CAXP	G	6	$34.22	6	$0.00	0	$8.17	$2.57	$8.05	$53.01
13149	C/LEON C410B J WHWH V802	E	EA	CAXP	G	8	$45.63	8	$0.00	0	$10.89	$3.42	$10.73	$70.67
13150	C/SHACK P190 J WHWH V802	E	EA	CAXP	G	41	$233.85	41	$0.00	0	$55.83	$17.53	$55.01	$362.22
13151	C/KELV P120 J WHWH V803	E	EA	CAXP	G	40	$228.15	40	$0.00	0	$54.47	$17.10	$53.67	$353.39
13152	C/LEON C250T J WHWH V802	E	EA	CAXP	G	8	$45.63	8	$0.00	0	$10.89	$3.42	$10.73	$70.67
13153	C/KELV F160 J WHWH V803	E	EA	CAXP	G	19	$108.37	19	$0.00	0	$25.87	$8.12	$25.49	$167.85
13154	C/KELV N405T J WHWH V803	E	EA	CAXP	G	377	$2,150.30	377	$0.00	0	$513.34	$161.21	$505.83	$3,330.68
13155	C/KELV N395B J WHWH V803	E	EA	CAXP	G	98	$558.96	98	$0.00	0	$133.44	$41.91	$131.49	$865.80
13157	C/KELV C335T J WHWH V803	E	EA	CAXP	G	112	$638.82	112	$0.00	0	$152.50	$47.89	$150.27	$989.48
13158	C/SHACK P120 H WWWW V802	E	EA	CAXP	G	84	$479.11	84	$0.00	0	$114.38	$35.92	$112.70	$742.11
13159	C/SHACK C170T H WWWW V802	E	EA	CAXP	G	124	$707.26	124	$0.00	0	$168.84	$53.02	$166.37	$1,095.49
13160	C/SHACK C250T H WWWW V802	E	EA	CAXP	G	108	$616.00	108	$0.00	0	$147.06	$46.18	$144.90	$954.14
13161	C/SHACK C270 H WWWW V802	E	EA	CAXP	G	29	$165.41	29	$0.00	0	$39.49	$12.40	$38.91	$256.21
13162	C/SHACK C335T H WWWW V802	E	EA	CAXP	G	148	$844.15	148	$0.00	0	$201.52	$63.29	$198.57	$1,307.53
13163	C/SHACK C370 H WWWW V802	E	EA	CAXP	G	73	$416.37	73	$0.00	0	$99.40	$31.22	$97.94	$644.93
13164	C/SHACK C380B H WWWW V802	E	EA	CAXP	G	114	$650.22	114	$0.00	0	$155.23	$48.75	$152.96	$1,007.16
13165	C/SHACK C390T H WWWW V802	E	EA	CAXP	G	149	$849.85	149	$0.00	0	$202.88	$63.71	$199.92	$1,316.36
13166	C/SHACK C410B H WWWW V802	E	EA	CAXP	G	81	$462.00	81	$0.00	0	$110.29	$34.64	$108.68	$715.61
13167	C/SHACK F230 H WWWW V802	E	EA	CAXP	G	29	$165.41	29	$0.00	0	$39.49	$12.40	$38.91	$256.21
13168	C/SHACK F310 H WWWW V802	E	EA	CAXP	G	140	$798.52	140	$0.00	0	$190.63	$59.87	$187.84	$1,236.86
13169	C/SHACK N375T H WWWW V802	E	EA	CAXP	G	497	$2,834.75	497	$0.00	0	$676.73	$212.52	$666.83	$4,390.83
13170	C/SHACK N395B H WWWW V802	E	EA	CAXP	G	13	$74.15	13	$0.00	0	$17.70	$5.56	$17.44	$114.85
13173	C/FRIG N395B J ALAL V802	E	EA	CAXP	G	8	$45.63	8	$0.00	0	$10.89	$3.42	$10.73	$70.67
13176	C/SHACK C250T J FAFA V802	E	EA	CAXP	G	542	$3,091.41	542	$0.00	0	$738.01	$231.76	$727.21	$4,788.39
13177	C/SHACK C170T J FAFA V802	E	EA	CAXP	G	262	$1,494.37	262	$0.00	0	$356.75	$112.03	$351.53	$2,314.68
13179	C/FRIG C380B J WHWH V802	E	EA	CAXP	G	54	$308.00	54	$0.00	0	$73.53	$23.09	$72.45	$477.07
13180	C/FRIG C410B J WHWH V802	E	EA	CAXP	G	36	$205.33	36	$0.00	0	$49.02	$15.39	$48.30	$318.04
13181	C/KELV C365H J WHWH V802	E	EA	CAXP	G	37	$211.04	37	$0.00	0	$50.38	$15.82	$49.64	$326.88
13182	C/KELV C170T J WHWH V803	E	EA	CAXP	G	51	$290.89	51	$0.00	0	$69.44	$21.81	$68.43	$450.57
13183	C/KELV C250T J WHWH V803	E	EA	CAXP	G	48	$273.78	48	$0.00	0	$65.36	$20.53	$64.40	$424.07
13184	C/SHACK C190 H WWWW V802	E	EA	CAXP	G	47	$268.07	47	$0.00	0	$64.00	$20.10	$63.06	$415.23
13186	C/KELV C380B J WHWH V803	E	EA	CAXP	G	82	$467.70	82	$0.00	0	$111.65	$35.06	$110.02	$724.43
13187	C/KELV N375T J WHWH V803	E	EA	CAXP	G	492	$2,806.23	492	$0.00	0	$669.93	$210.38	$660.12	$4,346.66
13188	C/KELV C410B J WHWH V803	E	EA	CAXP	G	54	$308.00	54	$0.00	0	$73.53	$23.09	$72.45	$477.07
13189	C/KELV N400H J WHWH V803	E	EA	CAXP	G	435	$2,481.12	435	$0.00	0	$592.31	$186.01	$583.64	$3,843.08
13190	C/KELV F310 J WHWH V803	E	EA	CAXP	G	3	$17.11	3	$0.00	0	$4.08	$1.28	$4.03	$26.50
13191	C/KELV C420T J WHWH V802	E	EA	CAXP	G	122	$695.85	122	$0.00	0	$166.12	$52.17	$163.69	$1,077.83
13195	C/LEON C370 J WHWH V802	E	EA	CAXP	G	3	$17.11	3	$0.00	0	$4.08	$1.28	$4.03	$26.50
13198	C/KELV C190 J WHWH V802	E	EA	CAXP	G	181	$1,032.37	181	$0.00	0	$246.46	$77.40	$242.85	$1,599.08
13199	C/KELV C270 J WHWH V802	E	EA	CAXP	G	123	$701.56	123	$0.00	0	$167.48	$52.60	$165.03	$1,086.67
13200	C/SHACK C420T H WWWW V802	E	EA	CAXP	G	30	$171.11	30	$0.00	0	$40.85	$12.83	$40.25	$265.04
13201	C/SHACK N400H H WWWW V802	E	EA	CAXP	G	875	$4,990.75	875	$0.00	0	$1,191.43	$374.16	$1,174.00	$7,730.34
13202	C/SHACK N395B J ALAL V802	E	EA	CAXP	G	5	$28.52	5	$0.00	0	$6.81	$2.14	$6.71	$44.18
13203	C/SHACK N405T J ALAL V802	E	EA	CAXP	G	377	$2,150.30	377	$0.00	0	$513.34	$161.21	$505.83	$3,330.68
13205	C/F&P N369B H WWWW	L	EA	CAFR	G	641	$0.00	0	$321.42	641	$872.81	$274.10	$860.04	$2,328.37
13209	C/KELV C120 J WHWH V803	E	EA	CAXP	G	79	$450.59	79	$0.00	0	$107.57	$33.78	$106.00	$697.94
13212	C/LEON C365H J WHWH V802	E	EA	CAXP	G	5	$28.52	5	$0.00	0	$6.81	$2.14	$6.71	$44.18
13215	C/KELV N375T J SASA V802	E	EA	CAXP	G	369	$2,104.67	369	$0.00	0	$502.44	$157.79	$495.09	$3,259.99
13216	C/KELV N395B J SASA V802	E	EA	CAXP	G	263	$1,500.08	263	$0.00	0	$358.11	$112.46	$352.87	$2,323.52
13217	C/KELV N405T J SASA V802	E	EA	CAXP	G	315	$1,796.67	315	$0.00	0	$428.92	$134.70	$422.64	$2,782.93

PART NUMBER	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM. CODE	SOURCE CODE	FCAST USAGE	ADMIN 3 COSTS	ADMIN 3 TRX	ADMIN 4 COST	ADMIN 4 TRX	SYS 2 COSTS	STORE 6 COSTS	STORE 7 COSTS	TOTAL COSTS
13218	C/KELV N400H J SASA V802	E	EA	CAXP	G	725	$4,135.19	725	$0.00	0	$987.19	$310.02	$972.74	$6,405.14
13220	C/FRIG N395B J SASA V802	E	EA	CAXP	G	12	$68.44	12	$0.00	0	$16.34	$5.13	$16.10	$106.01
13223	C/LEON C380B J WHWH V802	E	EA	CAXP	G	6	$34.22	6	$0.00	0	$8.17	$2.57	$8.05	$53.01
13226	C/SHACK F230 H WWWW V803	E	EA	CAXP	G	16	$91.26	16	$0.00	0	$21.79	$6.84	$21.47	$141.36
13227	C/FRIG C190 J WHWH V802	E	EA	CAXP	G	17	$96.96	17	$0.00	0	$23.15	$7.27	$22.81	$150.19
13228	C/KELV N375T J WHWH V814	E	EA	CAXP	G	39	$222.44	39	$0.00	0	$53.10	$16.68	$52.33	$344.55
13229	C/KELV N405T J WHWH V814	E	EA	CAXP	G	3	$17.11	3	$0.00	0	$4.08	$1.28	$4.03	$26.50
13230	C/KELV N400H J WHWH V814	E	EA	CAXP	G	46	$262.37	46	$0.00	0	$62.64	$19.67	$61.72	$406.40
13231	C/KELV N375T J ALAL V814	E	EA	CAXP	G	35	$199.63	35	$0.00	0	$47.66	$14.97	$46.96	$309.22
13232	C/KELV N405T J ALAL V814	E	EA	CAXP	G	2	$11.41	2	$0.00	0	$2.72	$0.86	$2.68	$17.67
13233	C/KELV N400H J ALAL V814	E	EA	CAXP	G	45	$256.67	45	$0.00	0	$61.27	$19.24	$60.38	$397.56
13234	C/KELV N375T J SASA V814	E	EA	CAXP	G	15	$85.56	15	$0.00	0	$20.42	$6.41	$20.13	$132.52
13235	C/KELV N405T J SASA V814	E	EA	CAXP	G	2	$11.41	2	$0.00	0	$2.72	$0.86	$2.68	$17.67
13236	C/KELV N400H J SASA V814	E	EA	CAXP	G	17	$96.96	17	$0.00	0	$23.15	$7.27	$22.81	$150.19
13242	C/FRIG N400H J ALAL V814	E	EA	CAXP	G	12	$68.44	12	$0.00	0	$16.34	$5.13	$16.10	$106.01
13245	C/FRIG N400H J SASA V814	E	EA	CAXP	G	18	$102.67	18	$0.00	0	$24.51	$7.70	$24.15	$159.03
13248	C/LEON N375T J ALAL V814	E	EA	CAXP	G	50	$285.19	50	$0.00	0	$68.08	$21.38	$67.09	$441.74
13252	C/LEON C250T J FAFA V802	E	EA	CAXP	G	30	$171.11	30	$0.00	0	$40.85	$12.83	$40.25	$265.04
13253	C/LEON C335T J SASA V802	E	EA	CAXP	G	152	$866.96	152	$0.00	0	$206.97	$65.00	$203.94	$1,342.87
13254	C/LEON N400H J SASA V814	E	EA	CAXP	G	45	$256.67	45	$0.00	0	$61.27	$19.24	$60.38	$397.56
13255	C/LEON N375T J SASA V814	E	EA	CAXP	G	45	$256.67	45	$0.00	0	$61.27	$19.24	$60.38	$397.56
13257	C/KELV F310 J ALAL V802	E	EA	CAXP	G	5	$28.52	5	$0.00	0	$6.81	$2.14	$6.71	$44.18
13258	C/SHACK N395B J SASA V802	E	EA	CAXP	G	5	$28.52	5	$0.00	0	$6.81	$2.14	$6.71	$44.18
13259	C/SHACK N375T H WWWW V814	E	EA	CAXP	G	5	$28.52	5	$0.00	0	$6.81	$2.14	$6.71	$44.18
13260	C/SHACK N405T H WWWW V814	E	EA	CAXP	G	8	$45.63	8	$0.00	0	$10.89	$3.42	$10.73	$70.67
13261	C/SHACK N400H H WWWW V814	E	EA	CAXP	G	8	$45.63	8	$0.00	0	$10.89	$3.42	$10.73	$70.67
13262	C/SHACK N375T J ALAL V814	E	EA	CAXP	G	2	$11.41	2	$0.00	0	$2.72	$0.86	$2.68	$17.67
13263	C/SHACK N405T J ALAL V814	E	EA	CAXP	G	6	$34.22	6	$0.00	0	$8.17	$2.57	$8.05	$53.01
13264	C/SHACK N400H J ALAL V814	E	EA	CAXP	G	6	$34.22	6	$0.00	0	$8.17	$2.57	$8.05	$53.01
13265	C/SHACK N375T J SASA V814	E	EA	CAXP	G	3	$17.11	3	$0.00	0	$4.08	$1.28	$4.03	$26.50
13266	C/SHACK N405T J SASA V814	E	EA	CAXP	G	6	$34.22	6	$0.00	0	$8.17	$2.57	$8.05	$53.01
13267	C/SHACK N400H J SASA V814	E	EA	CAXP	G	6	$34.22	6	$0.00	0	$8.17	$2.57	$8.05	$53.01
15352	C/F&P N375T H WWWW	L	EA	CAFP	G	225	$0.00	0	$112.82	225	$306.37	$96.21	$301.89	$817.29
15354	C/F&P N400H H WWWW	L	EA	CAFP	G	218	$0.00	0	$109.31	218	$296.84	$93.22	$292.49	$791.86
15355	C/F&P N395B H WWWW	L	EA	CAFP	G	666	$0.00	0	$333.96	666	$906.85	$284.79	$893.58	$2,419.18
15811	C/F&P C365H H WWWW V812	E	EA	CAAU	G	310	$1,768.15	310	$0.00	0	$422.11	$132.56	$415.93	$2,738.75
15813	C/SHACK C365H J WHWH	L	EA	CASH	G	427	$0.00	0	$214.11	427	$581.42	$182.59	$572.91	$1,551.03
15814	C/F&P H160E J WHWH V812	E	EA	CAAU	G	1637	$9,336.98	1637	$0.00	0	$2,229.00	$700.00	$2,196.38	$14,462.36
15815	C/F&P H220E J WHWH V812	E	EA	CAAU	G	1089	$6,211.35	1089	$0.00	0	$1,482.82	$465.67	$1,461.12	$9,620.96
15816	C/F&P H360E J WHWH V812	E	EA	CAAU	G	952	$5,429.94	952	$0.00	0	$1,296.28	$407.08	$1,277.31	$8,410.61
15817	C/F&P H510E J WHWH V812	E	EA	CAAU	G	485	$2,766.30	485	$0.00	0	$660.39	$207.39	$650.73	$4,284.81
15818	C/F&P H701E J WHWH V812	E	EA	CAAU	G	457	$2,606.60	457	$0.00	0	$622.27	$195.42	$613.16	$4,037.45
15823	C/F&P H160S J WHWH V812	E	EA	CAAU	G	2126	$12,126.10	2126	$0.00	0	$2,894.84	$909.10	$2,852.48	$18,782.52
15824	C/F&P H220S J WHWH V812	E	EA	CAAU	G	1124	$6,410.98	1124	$0.00	0	$1,530.48	$480.63	$1,508.08	$9,930.17
15825	C/F&P H360S J WHWH V812	E	EA	CAAU	G	948	$5,407.12	948	$0.00	0	$1,290.83	$405.37	$1,271.94	$8,375.26
15826	C/FRIG F310 J SASA	L	EA	CAFR	G	129	$0.00	0	$64.69	129	$175.65	$55.16	$173.08	$468.58
15827	C/FRIG C370 J SASA	L	EA	CAFR	G	167	$0.00	0	$83.74	167	$227.39	$71.41	$224.07	$606.61
15828	C/FRIG C365H J SASA	L	EA	CAFR	G	42	$0.00	0	$21.06	42	$57.19	$17.96	$56.35	$152.56
15829	C/FRIG C335T J SASA	L	EA	CAFR	G	20	$0.00	0	$10.03	20	$27.23	$8.55	$26.83	$72.64
15830	C/FRIG C390T J SASA	L	EA	CAFR	G	6	$0.00	0	$3.01	6	$8.17	$2.57	$8.05	$21.80
15831	C/FRIG C380B J SASA	L	EA	CAFR	G	325	$0.00	0	$162.97	325	$442.53	$138.97	$436.06	$1,180.53
15834	C/FRIG C410B J SASA	L	EA	CAFR	G	11	$0.00	0	$5.52	11	$14.98	$4.70	$14.76	$39.96
15836	C/KELV C365H J SASA	L	EA	CAKE	G	68	$0.00	0	$34.10	68	$92.59	$29.08	$91.24	$247.01
15837	C/KELV C390T J SASA	L	EA	CAKE	G	8	$0.00	0	$4.01	8	$10.89	$3.42	$10.73	$29.05

PART NUMBER	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM. CODE	SOURCE CODE	FCAST USAGE	ADMIN 3 COSTS	ADMIN 3 TRX	ADMIN 4 COST	ADMIN 4 TRX	SYS 2 COSTS	STORE 6 COSTS	STORE 7 COSTS	TOTAL COSTS
15840	C/KELV C410B J SASA	L	EA	CAKE	G	17	$0.00	0	$8.52	17	$23.15	$7.27	$22.81	$61.75
15842	C/F&P F310 J WHWH V812	E	EA	CAAU	G	2376	$13,552.03	2376	$0.00	0	$3,235.25	$1,016.00	$3,187.91	$20,991.19
15843	C/F&P C370 J WHWH V812	E	EA	CAAU	G	2807	$16,010.33	2807	$0.00	0	$3,822.12	$1,200.30	$3,766.18	$24,798.93
15844	C/F&P C365H J WHWH V812	E	EA	CAAU	G	547	$3,119.93	547	$0.00	0	$744.82	$233.90	$733.92	$4,832.57
15845	C/F&P C335T J WHWH V812	E	EA	CAAU	G	1827	$10,420.69	1827	$0.00	0	$2,487.71	$781.24	$2,451.31	$16,140.95
15847	C/F&P C390T J WHWH V812	E	EA	CAAU	G	2501	$14,265.00	2501	$0.00	0	$3,405.46	$1,069.45	$3,355.62	$22,095.53
15848	C/F&P N375T J WHWH V812	E	EA	CAAU	G	1894	$10,802.84	1894	$0.00	0	$2,578.94	$809.89	$2,541.20	$16,732.87
15849	C/F&P C380B J WHWH V812	E	EA	CAAU	G	1838	$10,483.43	1838	$0.00	0	$2,502.69	$785.95	$2,466.07	$16,238.14
15850	C/F&P C420T J WHWH V812	E	EA	CAAU	G	2011	$11,470.17	2011	$0.00	0	$2,738.25	$859.92	$2,698.18	$17,766.52
15852	C/F&P N405T J WHWH V812	E	EA	CAAU	G	1410	$8,042.24	1410	$0.00	0	$1,919.91	$602.93	$1,891.81	$12,456.89
15853	C/F&P C415H J WHWH V812	E	EA	CAAU	G	792	$4,517.34	792	$0.00	0	$1,078.42	$338.67	$1,062.64	$6,997.07
15854	C/F&P N400H J WHWH V812	E	EA	CAAU	G	727	$4,146.60	727	$0.00	0	$989.91	$310.87	$975.42	$6,422.80
15855	C/F&P C410B J WHWH V812	E	EA	CAAU	G	3548	$20,236.79	3548	$0.00	0	$4,831.09	$1,517.16	$4,760.39	$31,345.43
15856	C/F&P N395B J WHWH V812	E	EA	CAAU	G	4513	$25,740.87	4513	$0.00	0	$6,145.07	$1,929.80	$6,055.14	$39,870.88
15857	C/F&P P190 J WHWH V812	E	EA	CAAU	G	112	$638.82	112	$0.00	0	$152.50	$47.89	$150.27	$989.48
15858	C/F&P C190 J WHWH V812	E	EA	CAAU	G	667	$3,804.38	667	$0.00	0	$908.21	$285.22	$894.92	$5,892.73
15859	C/F&P F160 J WHWH V812	E	EA	CAAU	G	832	$4,745.49	832	$0.00	0	$1,132.88	$355.77	$1,116.30	$7,350.44
15860	C/F&P C170T J WHWH V812	E	EA	CAAU	G	1090	$6,217.05	1090	$0.00	0	$1,484.19	$466.09	$1,462.47	$9,629.80
15861	C/F&P C270 J WHWH V812	E	EA	CAAU	G	1997	$11,390.32	1997	$0.00	0	$2,719.19	$853.94	$2,679.40	$17,642.85
15862	C/F&P F230 J WHWH V812	E	EA	CAAU	G	1752	$9,992.91	1752	$0.00	0	$2,385.59	$749.17	$2,350.68	$15,478.35
15863	C/F&P C250T J WHWH V812	E	EA	CAAU	G	1977	$11,276.25	1977	$0.00	0	$2,691.96	$845.38	$2,652.56	$17,466.15
15864	C/F&P C240B J WHWH V812	E	EA	CAAU	G	2137	$12,188.84	2137	$0.00	0	$2,909.82	$913.80	$2,867.24	$18,879.70
15865	C/FRIG C389T J WHWH	L	EA	CAFR	G	68	$0.00	0	$34.10	68	$92.59	$29.08	$91.24	$247.01
15866	C/KELV C389T J WHWH	L	EA	CAKE	G	109	$0.00	0	$54.66	109	$148.42	$46.61	$146.25	$395.94
15867	C/SHACK C370 J WH	L	EA	CASH	G	40	$0.00	0	$20.06	40	$54.47	$17.10	$53.67	$145.30
15869	C/SHACK F310 J WH	L	EA	CASH	G	20	$0.00	0	$10.03	20	$27.23	$8.55	$26.83	$72.64
15870	C/SHACK H360 J WH	L	EA	CASH	G	35	$0.00	0	$17.55	35	$47.66	$14.97	$46.96	$127.14
15871	C/SHACK H510 J WH	L	EA	CASH	G	5	$0.00	0	$2.51	5	$6.81	$2.14	$6.71	$18.17
15872	C/F&P N369B H WWWW V812	E	EA	CAAU	G	1449	$8,264.69	1449	$0.00	0	$1,973.01	$619.61	$1,944.14	$12,801.45
15873	C/SHACK C120 J WH	L	EA	CASH	G	104	$0.00	0	$52.15	104	$141.61	$44.47	$139.54	$377.77
15874	C/F&P P120 J WHWH V812	E	EA	CAAU	G	168	$958.22	168	$0.00	0	$228.76	$71.84	$225.41	$1,484.23
15875	C/KELV N369B J SASA	L	EA	CAKE	G	180	$0.00	0	$90.26	180	$245.09	$76.97	$241.51	$653.83
15876	C/FRIG N369B J SASA	L	EA	CAFR	G	120	$0.00	0	$60.17	120	$163.40	$51.31	$161.01	$435.89
NH360S	M/SANDEN H360	L	EA	C800	G	1264	$0.00	0	$633.82	1264	$1,721.11	$540.50	$1,695.92	$4,591.35
UNALLH	UNALLOCATED HF M/S PARTS NO'S	L	EA	CAHF	G	1400	$0.00	0	$702.01	1400	$1,906.29	$598.65	$1,878.40	$5,085.35
UNALLR	UNALLOCATED RF M/S PARTS NO'S	L	EA	CARF	G	2352	$0.00	0	$1,179.38	2352	$3,202.57	$1,005.74	$3,155.71	$8,543.40
						66828	$331,733.80	58161	$4,345.97	8667	$90,995.50	$28,576.33	$89,663.92	$545,315.52

PART NUMBER	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	HF MAN COSTS	HF ASSY COST	RF MAN COST	RF ASSY COST	COMPONENT COUNT	HF PRODN ADJ FOR COMPONENTS	RF PRODN ADJ FOR COMPONENTS	TOTAL PROD COST
12500	C/KELV H160SL J WHWH V802	E	EA	CAXP	G	42	$1,848.02	$1,804.10	$0.00	$0.00	349.6508	14685.3336	0.0000	$3,652.12
12501	C/KELV H220SL J WHWH V802	E	EA	CAXP	G	15	$675.60	$659.53	$0.00	$0.00	357.9085	5368.6275	0.0000	$1,335.13
12502	C/KELV H360SL J WHWH V802	E	EA	CAXP	G	15	$738.09	$720.53	$0.00	$0.00	391.0105	5865.1575	0.0000	$1,458.62
12503	C/KELV H510SL J WHWH V802	E	EA	CAXP	G	8	$447.26	$436.62	$0.00	$0.00	444.2628	3554.1024	0.0000	$883.88
12504	C/KELV H701SL J WHWH V802	E	EA	CAXP	G	9	$539.93	$527.09	$0.00	$0.00	476.7240	4290.5160	0.0000	$1,067.02
12505	C/KELV H220EL J WHWH V802	E	EA	CAXP	G	174	$7,837.01	$7,650.57	$0.00	$0.00	357.9085	62276.0790	0.0000	$15,487.58
12506	C/KELV H360EL J WHWH V802	E	EA	CAXP	G	200	$9,841.19	$9,607.07	$0.00	$0.00	391.0105	78202.1000	0.0000	$19,448.26
12508	C/KELV H510EL J WHWH V802	E	EA	CAXP	G	130	$7,267.96	$7,095.05	$0.00	$0.00	444.2628	57754.1640	0.0000	$14,363.01
12509	C/KELV H701EL J WHWH V802	E	EA	CAXP	G	5	$299.96	$292.83	$0.00	$0.00	476.7240	2383.6200	0.0000	$592.79
12512	C/KELV H360EL J WHWH V810	E	EA	CAXP	G	287	$14,122.11	$13,786.14	$0.00	$0.00	391.0105	112220.0135	0.0000	$27,908.25
12515	C/SHARP H160EL J WHWH V810	E	EA	CAXP	G	576	$25,344.65	$24,741.70	$0.00	$0.00	349.6508	201398.8608	0.0000	$50,086.35
12516	C/SHARP H220EL J WHWH V810	E	EA	CAXP	G	4265	$192,096.93	$187,526.86	$0.00	$0.00	357.9085	1526479.7525	0.0000	$379,623.79
12518	C/SHACK H220SL J WHWH V810	E	EA	CAXP	G	3494	$157,370.85	$153,626.93	$0.00	$0.00	357.9085	1250532.2990	0.0000	$310,997.78
12519	C/SHACK H360SL J WHWH V810	E	EA	CAXP	G	1428	$70,266.12	$68,594.46	$0.00	$0.00	391.0105	558362.9940	0.0000	$138,860.58
12520	C/SHACK H510SL J WHWH V810	E	EA	CAXP	G	1021	$57,081.46	$55,723.47	$0.00	$0.00	444.2628	453592.3188	0.0000	$112,804.93
12521	C/SHACK H701SL J WHWH V810	E	EA	CAXP	G	1175	$70,491.09	$68,814.08	$0.00	$0.00	476.7240	560150.7000	0.0000	$139,305.17
12522	C/SHACK H701SL J WHWH V802	E	EA	CAXP	G	881	$52,853.32	$51,595.92	$0.00	$0.00	476.7240	419993.8440	0.0000	$104,449.24
12524	C/SHACK H220SL J WHWH V802	E	EA	CAXP	G	697	$31,393.10	$30,646.24	$0.00	$0.00	357.9085	249462.2245	0.0000	$62,039.34
12525	C/SHACK H360SL J WHWH V802	E	EA	CAXP	G	766	$37,691.77	$36,795.07	$0.00	$0.00	391.0105	299514.0430	0.0000	$74,486.84
12526	C/SHACK H510SL J WHWH V802	E	EA	CAXP	G	489	$27,338.72	$26,688.32	$0.00	$0.00	444.2628	217244.5092	0.0000	$54,027.04
12527	C/SHARP H360EL J WHWH V810	E	EA	CAXP	G	659	$32,426.73	$31,655.29	$0.00	$0.00	391.0105	257675.9195	0.0000	$64,082.02
12528	C/SHACK H160SL J WHWH V803	E	EA	CAXP	G	127	$5,588.14	$5,455.20	$0.00	$0.00	349.6508	44405.6516	0.0000	$11,043.34
12530	C/SHACK H360SL J WHWH V803	E	EA	CAXP	G	536	$26,374.40	$25,746.94	$0.00	$0.00	391.0105	209581.6280	0.0000	$52,121.34
12531	C/SHACK H701SL J WHWH V803	E	EA	CAXP	G	104	$6,239.21	$6,090.78	$0.00	$0.00	476.7240	49579.2960	0.0000	$12,329.99
12532	C/SHACK H510SL J WHWH V803	E	EA	CAXP	G	147	$8,218.39	$8,022.87	$0.00	$0.00	444.2628	65306.6316	0.0000	$16,241.26
12533	C/KELV H510SL J WHWH V803	E	EA	CAXP	G	3	$167.72	$163.73	$0.00	$0.00	444.2628	1332.7884	0.0000	$331.45
12534	C/KELV H360SL J WHWH V803	E	EA	CAXP	G	6	$295.24	$288.21	$0.00	$0.00	391.0105	2346.0630	0.0000	$583.45
12535	C/KELV H220SL J WHWH V803	E	EA	CAXP	G	272	$12,250.96	$11,959.51	$0.00	$0.00	357.9085	97351.1120	0.0000	$24,210.47
12536	C/KELV H160SL J WHWH V803	E	EA	CAXP	G	43	$1,892.05	$1,847.04	$0.00	$0.00	349.6508	15034.9844	0.0000	$3,739.09
12537	C/KELV H220EL J WHWH V803	E	EA	CAXP	G	23	$1,035.93	$1,011.28	$0.00	$0.00	357.9085	8231.8955	0.0000	$2,047.21
12538	C/KELV H360EL J WHWH V803	E	EA	CAXP	G	38	$1,869.83	$1,825.34	$0.00	$0.00	391.0105	14858.3990	0.0000	$3,695.17
12539	C/KELV H510EL J WHWH V803	E	EA	CAXP	G	16	$894.52	$873.24	$0.00	$0.00	444.2628	7108.2048	0.0000	$1,767.76
12540	C/FRIG H360EL J WHWH V813	E	EA	CAXP	G	96	$4,723.77	$4,611.39	$0.00	$0.00	391.0105	37537.0080	0.0000	$9,335.16
12541	C/FRIG H510EL J WHWH V813	E	EA	CAXP	G	41	$2,292.20	$2,237.67	$0.00	$0.00	444.2628	18214.7748	0.0000	$4,529.87
12542	C/FRIG H701EL J WHWH V813	E	EA	CAXP	G	52	$3,119.61	$3,045.39	$0.00	$0.00	476.7240	24789.6480	0.0000	$6,165.00
12545	C/KELV H701SL J WHWH V803	E	EA	CAXP	G	5	$299.96	$292.83	$0.00	$0.00	476.7240	2383.6200	0.0000	$592.79
12552	C/KELV H160EL J WHWH V802	E	EA	CAXP	G	2	$88.00	$85.91	$0.00	$0.00	349.6508	699.3016	0.0000	$173.91
12854	C/FRIG F310 J WHWH	L	EA	CAFR	G	1228	$0.00	$0.00	$29,549.59	$32,460.98	423.1629	0.0000	519644.0412	$62,010.57
12855	C/FRIG C370 J WHWH	L	EA	CAFR	G	1656	$0.00	$0.00	$40,116.90	$44,069.44	426.0117	0.0000	705475.3752	$84,186.34
12856	C/FRIG C365H J WHWH	L	EA	CAFR	G	429	$0.00	$0.00	$13,143.25	$14,438.20	538.7660	0.0000	231130.6140	$27,581.45
12857	C/FRIG C335T J WHWH	L	EA	CAFR	G	1610	$0.00	$0.00	$48,046.57	$52,780.39	524.7967	0.0000	844922.6870	$100,826.96
12859	C/FRIG C390T J WHWH	L	EA	CAFR	G	636	$0.00	$0.00	$19,897.16	$21,857.54	550.1594	0.0000	349901.3784	$41,754.70
12860	C/FRIG N375T J SASA	L	EA	CAFR	G	8	$0.00	$0.00	$271.01	$297.71	595.7243	0.0000	4765.7944	$568.72
12861	C/FRIG C380B J WHWH	L	EA	CAFR	G	3062	$0.00	$0.00	$95,414.94	$104,815.76	547.9813	0.0000	1677918.7406	$200,230.70
12865	C/FRIG N400H J SASA	L	EA	CAFR	G	8	$0.00	$0.00	$325.86	$357.96	716.2962	0.0000	5730.3696	$683.82
12866	C/FRIG C410B J WHWH	L	EA	CAFR	G	913	$0.00	$0.00	$28,413.49	$31,212.95	547.2785	0.0000	499665.2705	$59,626.44
12867	C/FRIG N395B J SASA	L	EA	CAFR	G	203	$0.00	$0.00	$7,151.56	$7,856.17	619.5253	0.0000	125763.6359	$15,007.73
12868	C/KELV F310 J SASA	L	EA	CAKE	G	201	$0.00	$0.00	$4,836.70	$5,313.24	423.1629	0.0000	85055.7429	$10,149.94
12869	C/KELV C370 J SASA	L	EA	CAKE	G	275	$0.00	$0.00	$6,661.92	$7,318.29	426.0117	0.0000	117153.2175	$13,980.21
12870	C/KELV C365H J WHWH	L	EA	CAKE	G	690	$0.00	$0.00	$21,139.50	$23,222.28	538.7660	0.0000	371748.5400	$44,361.78
12871	C/KELV C335T J SASA	L	EA	CAKE	G	30	$0.00	$0.00	$895.28	$983.49	524.7967	0.0000	15743.9010	$1,878.77
12873	C/KELV C390T J WHWH	L	EA	CAKE	G	1030	$0.00	$0.00	$32,223.39	$35,398.22	550.1594	0.0000	566664.1820	$67,621.61
12874	C/KELV N375T J SASA	L	EA	CAKE	G	12	$0.00	$0.00	$406.51	$446.56	595.7243	0.0000	7148.6916	$853.07

PART NUMBER	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	HF MAN COSTS	HF ASSY COST	RF MAN COST	RF ASSY COST	COMPONENT COUNT	HF PRODN ADJ FOR COMPONENTS	RF PRODN ADJ FOR COMPONENTS	TOTAL PROD COST
12875	C/KELV C380B J SASA	L	EA	CAKE	G	532	$0.00	$0.00	$16,577.64	$18,210.97	547.9813	0.0000	291526.0516	$34,788.61
12879	C/KELV N400H J SASA	L	EA	CAKE	G	14	$0.00	$0.00	$570.25	$626.44	716.2962	0.0000	10028.1468	$1,196.69
12880	C/KELV C410B J WHWH	L	EA	CAKE	G	1482	$0.00	$0.00	$46,121.35	$50,665.49	547.2785	0.0000	811066.7370	$96,786.84
12881	C/KELV N395B J SASA	L	EA	CAKE	G	377	$0.00	$0.00	$13,281.46	$14,590.03	619.5253	0.0000	233561.0381	$27,871.49
12882	C/SHACK F310 J WHWH	L	EA	CASH	G	1216	$0.00	$0.00	$29,260.83	$32,143.77	423.1629	0.0000	514566.0864	$61,404.60
12883	C/SHACK C370 J WHWH	L	EA	CASH	G	1898	$0.00	$0.00	$45,979.39	$50,509.54	426.0117	0.0000	808570.2066	$96,488.93
12884	C/FRIG N375T J WHWH	L	EA	CAFR	G	686	$0.00	$0.00	$23,238.86	$25,528.49	595.7243	0.0000	408666.8698	$48,767.35
12885	C/SHACK C335T J WHWH	L	EA	CASH	G	1324	$0.00	$0.00	$39,511.59	$43,404.50	524.7967	0.0000	694830.8308	$82,916.09
12887	C/SHACK C390T J WHWH	L	EA	CASH	G	417	$0.00	$0.00	$13,045.78	$14,331.12	550.1594	0.0000	229416.4698	$27,376.90
12888	C/SHACK N375T J WHWH	L	EA	CASH	G	372	$0.00	$0.00	$12,601.83	$13,843.44	595.7243	0.0000	221609.4396	$26,445.27
12889	C/SHACK C380B J WHWH	L	EA	CASH	G	2313	$0.00	$0.00	$72,075.36	$79,176.63	547.9813	0.0000	1267480.7469	$151,251.99
12892	C/SHACK N405T J WHWH	L	EA	CASH	G	470	$0.00	$0.00	$16,275.62	$17,879.19	608.9678	0.0000	286214.8660	$34,154.81
12894	C/FRIG N400H J WHWH	L	EA	CAFR	G	838	$0.00	$0.00	$34,133.60	$37,496.64	716.2962	0.0000	600256.2156	$71,630.24
12895	C/SHACK C410B J WHWH	L	EA	CASH	G	821	$0.00	$0.00	$25,550.36	$28,067.72	547.2785	0.0000	449315.6485	$53,618.08
12896	C/SHACK N395B J WHWH	L	EA	CASH	G	1085	$0.00	$0.00	$38,223.83	$41,989.86	619.5253	0.0000	672184.9505	$80,213.69
12905	C/F&P C415H H WWWW V812	E	EA	CAAU	G	489	$0.00	$0.00	$18,137.16	$19,924.14	652.2514	0.0000	318950.9346	$38,061.30
12906	C/F&P N395B H WWWW V812	E	EA	CAAU	G	1355	$0.00	$0.00	$47,735.76	$52,438.95	619.5253	0.0000	839456.7815	$100,174.71
12913	C/F&P N375T H WWWW V812	E	EA	CAAU	G	421	$0.00	$0.00	$14,261.75	$15,666.90	595.7243	0.0000	250799.9303	$29,928.65
12914	C/F&P N405T H WWWW V812	E	EA	CAAU	G	413	$0.00	$0.00	$14,301.77	$15,710.86	608.9678	0.0000	251503.7014	$30,012.63
12915	C/F&P N400H H WWWW V812	E	EA	CAAU	G	209	$0.00	$0.00	$8,513.03	$9,351.79	716.2962	0.0000	149705.9058	$17,864.82
12953	C/FRIG N395B J WHWH	L	EA	CAFR	G	1817	$0.00	$0.00	$64,011.71	$70,318.51	619.5253	0.0000	1125677.4701	$134,330.22
12954	C/KELV F310 J WHWH	L	EA	CAKE	G	1931	$0.00	$0.00	$46,466.00	$51,044.10	423.1629	0.0000	817127.5599	$97,510.10
12955	C/KELV C370 J WHWH	L	EA	CAKE	G	2705	$0.00	$0.00	$65,529.11	$71,985.41	426.0117	0.0000	1152361.6485	$137,514.52
12956	C/KELV C335T J WHWH	L	EA	CAKE	G	2607	$0.00	$0.00	$77,799.64	$85,464.90	524.7967	0.0000	1368144.9969	$163,264.54
12957	C/KELV N375T J WHWH	L	EA	CAKE	G	1115	$0.00	$0.00	$37,771.62	$41,493.10	595.7243	0.0000	664232.5945	$79,264.72
12958	C/KELV C380B J WHWH	L	EA	CAKE	G	4986	$0.00	$0.00	$155,368.68	$170,676.48	547.9813	0.0000	2732234.7618	$326,045.16
12960	C/KELV N400H J WHWH	L	EA	CAKE	G	1375	$0.00	$0.00	$56,006.81	$61,524.91	716.2962	0.0000	984907.2750	$117,531.72
12961	C/KELV N395B J WHWH	L	EA	CAKE	G	3440	$0.00	$0.00	$121,188.93	$133,129.15	619.5253	0.0000	2131167.0320	$254,318.08
12962	C/KELV P120 J WHWH	L	EA	CAKE	G	2156	$0.00	$0.00	$36,067.11	$39,620.65	294.1827	0.0000	634257.9012	$75,687.76
12963	C/KELV C190 J WHWH	L	EA	CAKE	G	2205	$0.00	$0.00	$41,635.65	$45,737.83	332.0560	0.0000	732183.4800	$87,373.48
12964	C/KELV F160 J WHWH	L	EA	CAKE	G	1397	$0.00	$0.00	$54,411.60	$59,772.54	684.9354	0.0000	956854.7538	$114,184.14
12965	C/KELV C170T J WHWH	L	EA	CAKE	G	3835	$0.00	$0.00	$97,990.22	$107,644.77	449.3367	0.0000	1723206.2445	$205,634.99
12966	C/KELV C270 J WHWH	L	EA	CAKE	G	1339	$0.00	$0.00	$27,926.04	$30,677.48	366.7612	0.0000	491093.2468	$58,603.52
12967	C/KELV C250T J WHWH	L	EA	CAKE	G	1316	$0.00	$0.00	$62,964.08	$69,167.66	841.3787	0.0000	1107254.3692	$132,131.74
12968	C/KELV C240B J WHWH	L	EA	CAKE	G	4076	$0.00	$0.00	$113,607.03	$124,800.23	490.1461	0.0000	1997835.5036	$238,407.26
12969	C/KELV F230 J WHWH	L	EA	CAKE	G	1427	$0.00	$0.00	$36,212.07	$39,779.89	446.2559	0.0000	636807.1693	$75,991.96
12970	C/FRIG P120 J WHWH	L	EA	CAFR	G	1327	$0.00	$0.00	$22,199.01	$24,386.18	294.1827	0.0000	390380.4429	$46,585.19
12971	C/FRIG C190 J WHWH	L	EA	CAFR	G	1369	$0.00	$0.00	$25,849.98	$28,396.87	332.0560	0.0000	454584.6640	$54,246.85
12972	C/FRIG F160 J WHWH	L	EA	CAFR	G	927	$0.00	$0.00	$36,105.62	$39,662.95	684.9354	0.0000	634935.1158	$75,768.57
12973	C/FRIG C170T J WHWH	L	EA	CAFR	G	2324	$0.00	$0.00	$59,381.82	$65,232.45	449.3367	0.0000	1044258.4908	$124,614.27
12975	C/FRIG C270 J WHWH	L	EA	CAFR	G	804	$0.00	$0.00	$16,768.14	$18,420.23	366.7612	0.0000	294876.0048	$35,188.37
12976	C/FRIG C250T J WHWH	L	EA	CAFR	G	788	$0.00	$0.00	$37,701.90	$41,416.50	841.3787	0.0000	663006.4156	$79,118.40
12977	C/FRIG C240B J WHWH	L	EA	CAFR	G	2512	$0.00	$0.00	$70,014.93	$76,913.19	490.1461	0.0000	1231247.0032	$146,928.12
12978	C/FRIG F230 J WHWH	L	EA	CAFR	G	973	$0.00	$0.00	$24,691.20	$27,123.92	446.2559	0.0000	434206.9907	$51,815.12
12980	C/SHACK P120 J WHWH	L	EA	CASH	G	779	$0.00	$0.00	$13,031.67	$14,315.62	294.1827	0.0000	229168.3233	$27,347.29
12981	C/SHACK C190 J WHWH	L	EA	CASH	G	1089	$0.00	$0.00	$20,562.91	$22,588.89	332.0560	0.0000	361608.9840	$43,151.80
12982	C/SHACK F160 J WHWH	L	EA	CASH	G	581	$0.00	$0.00	$22,629.30	$24,858.87	684.9354	0.0000	397947.4674	$47,488.17
12983	C/SHACK C170T J WHWH	L	EA	CASH	G	1439	$0.00	$0.00	$36,768.69	$40,391.35	449.3367	0.0000	646595.5113	$77,160.04
12985	C/SHACK C270 J WHWH	L	EA	CASH	G	724	$0.00	$0.00	$15,099.67	$16,587.37	366.7612	0.0000	265535.1088	$31,687.04
12987	C/SHACK C240B J WHWH	L	EA	CASH	G	1423	$0.00	$0.00	$39,662.12	$43,569.86	490.1461	0.0000	697477.9003	$83,231.98
12988	C/SHACK F230 J WHWH	L	EA	CASH	G	543	$0.00	$0.00	$13,779.37	$15,136.99	446.2559	0.0000	242316.9537	$28,916.36
12996	C/FRIG H160S J WHWH V802	E	EA	CAXP	G	3	$132.00	$128.86	$0.00	$0.00	349.6508	1048.9524	0.0000	$260.86
12997	C/FRIG H220S J WHWH V802	E	EA	CAXP	G	13	$585.52	$571.59	$0.00	$0.00	357.9085	4652.8105	0.0000	$1,157.11

PART NUMBER	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	HF MAN COSTS	HF ASSY COST	RF MAN COST	RF ASSY COST	COMPONENT COUNT	HF PRODN ADJ FOR COMPONENTS	RF PRODN ADJ FOR COMPONENTS	TOTAL PROD COST
12998	C/FRIG H360S J WHWH V802	E	EA	CAXP	G	5	$246.03	$240.18	$0.00	$0.00	391.0105	1955.0525	0.0000	$486.21
13002	C/KELV H160S J WHWH V802	E	EA	CAXP	G	5	$220.01	$214.77	$0.00	$0.00	349.6508	1748.2540	0.0000	$434.78
13003	C/KELV H220S J WHWH V802	E	EA	CAXP	G	5	$225.20	$219.84	$0.00	$0.00	357.9085	1789.5425	0.0000	$445.04
13004	C/KELV H360S J WHWH V802	E	EA	CAXP	G	10	$492.06	$480.35	$0.00	$0.00	391.0105	3910.1050	0.0000	$972.41
13005	C/KELV H510S J WHWH V802	E	EA	CAXP	G	16	$894.52	$873.24	$0.00	$0.00	444.2628	7108.2048	0.0000	$1,767.76
13006	C/KELV H701S J WHWH V802	E	EA	CAXP	G	10	$599.92	$585.65	$0.00	$0.00	476.7240	4767.2400	0.0000	$1,185.57
13007	C/SHACK H160S J WHWH V802	E	EA	CAXP	G	24	$1,056.03	$1,030.90	$0.00	$0.00	349.6508	8391.6192	0.0000	$2,086.93
13008	C/SHACK H220S J WHWH V802	E	EA	CAXP	G	27	$1,216.09	$1,187.16	$0.00	$0.00	357.9085	9663.5295	0.0000	$2,403.25
13009	C/SHACK H360S J WHWH V802	E	EA	CAXP	G	25	$1,230.15	$1,200.88	$0.00	$0.00	391.0105	9775.2625	0.0000	$2,431.03
13011	C/SHACK H510S J WHWH V802	E	EA	CAXP	G	14	$782.70	$764.08	$0.00	$0.00	444.2628	6219.6792	0.0000	$1,546.78
13012	C/SHACK H701S J WHWH V802	E	EA	CAXP	G	16	$959.88	$937.04	$0.00	$0.00	476.7240	7627.5840	0.0000	$1,896.92
13013	C/KELV H160E J WHWH	L	EA	CAKE	G	1982	$87,210.25	$85,135.49	$0.00	$0.00	349.6508	693007.8856	0.0000	$172,345.74
13014	C/KELV H220E J WHWH	L	EA	CAKE	G	1892	$85,216.27	$83,188.94	$0.00	$0.00	357.9085	677162.8820	0.0000	$168,405.21
13016	C/KELV H360E J WHWH	L	EA	CAKE	G	2012	$99,002.41	$96,647.10	$0.00	$0.00	391.0105	786713.1260	0.0000	$195,649.51
13017	C/KELV H510E J WHWH	L	EA	CAKE	G	518	$28,960.03	$28,271.06	$0.00	$0.00	444.2628	230128.1304	0.0000	$57,231.09
13018	C/KELV H701E J WHWH	L	EA	CAKE	G	273	$16,377.93	$15,988.29	$0.00	$0.00	476.7240	130145.6520	0.0000	$32,366.22
13019	C/SHACK H160E J WHWH	L	EA	CASH	G	320	$14,080.36	$13,745.39	$0.00	$0.00	349.6508	111888.2560	0.0000	$27,825.75
13020	C/SHACK H220E J WHWH	L	EA	CASH	G	580	$26,123.38	$25,501.89	$0.00	$0.00	357.9085	207586.9300	0.0000	$51,625.27
13021	C/SHACK H360E J WHWH	L	EA	CASH	G	710	$34,936.24	$34,105.09	$0.00	$0.00	391.0105	277617.4550	0.0000	$69,041.33
13022	C/SHACK H510E J WHWH	L	EA	CASH	G	301	$16,828.13	$16,427.78	$0.00	$0.00	444.2628	133723.1028	0.0000	$33,255.91
13023	C/SHACK H701E J WHWH	L	EA	CASH	G	195	$11,698.52	$11,420.21	$0.00	$0.00	476.7240	92961.1800	0.0000	$23,118.73
13024	C/FRIG H160E J WHWH	L	EA	CAFR	G	1343	$59,093.53	$57,687.67	$0.00	$0.00	349.6508	469581.0244	0.0000	$116,781.20
13025	C/FRIG H220E J WHWH	L	EA	CAFR	G	1272	$57,291.28	$55,928.29	$0.00	$0.00	357.9085	455259.6120	0.0000	$113,219.57
13026	C/FRIG H360E J WHWH	L	EA	CAFR	G	1390	$68,396.30	$66,769.12	$0.00	$0.00	391.0105	543504.5950	0.0000	$135,165.42
13027	C/FRIG H510E J WHWH	L	EA	CAFR	G	351	$19,623.50	$19,156.65	$0.00	$0.00	444.2628	155936.2428	0.0000	$38,780.15
13028	C/FRIG H701E J WHWH	L	EA	CAFR	G	185	$11,098.60	$10,834.56	$0.00	$0.00	476.7240	88193.9400	0.0000	$21,933.16
13039	C/F&P F310 H WWWW	L	EA	CAFP	G	358	$0.00	$0.00	$8,614.62	$9,463.38	423.1629	0.0000	151492.3182	$18,078.00
13040	C/F&P C370 H WWWW	L	EA	CAFP	G	371	$0.00	$0.00	$8,987.54	$9,873.04	426.0117	0.0000	158050.3407	$18,860.58
13041	C/F&P C365H H WWWW	L	EA	CAFP	G	180	$0.00	$0.00	$5,514.65	$6,057.99	538.7660	0.0000	96977.8800	$11,572.64
13042	C/F&P C335T H WWWW	L	EA	CAAU	G	322	$0.00	$0.00	$9,609.31	$10,556.08	524.7967	0.0000	168984.5374	$20,165.39
13043	C/F&P C390T H WWWW	L	EA	CAFP	G	166	$0.00	$0.00	$5,193.28	$5,704.96	550.1594	0.0000	91326.4604	$10,898.24
13044	C/F&P C380B H WWWW	L	EA	CAFP	G	1057	$0.00	$0.00	$32,937.16	$36,182.32	547.9813	0.0000	579216.2341	$69,119.48
13047	C/F&P C410B H WWWW	L	EA	CAFP	G	226	$0.00	$0.00	$7,033.35	$7,726.32	547.2785	0.0000	123684.9410	$14,759.67
13056	C/FRIG C240B H WWWW V813	E	EA	CAXP	G	144	$0.00	$0.00	$4,013.59	$4,409.04	490.1461	0.0000	70581.0384	$8,422.63
13065	C/KELV C229 J WHWH	L	EA	CAKE	G	1650	$0.00	$0.00	$36,491.48	$40,086.83	388.9216	0.0000	641720.6400	$76,578.31
13067	C/KELV N369B J WHWH	L	EA	CAKE	G	1689	$0.00	$0.00	$58,385.70	$64,138.19	607.8989	0.0000	1026741.2421	$122,523.89
13068	C/FRIG C229 J WHWH	L	EA	CAFR	G	935	$0.00	$0.00	$20,678.50	$22,715.87	388.9216	0.0000	363641.6960	$43,394.37
13070	C/FRIG N369B J WHWH	L	EA	CAFR	G	1123	$0.00	$0.00	$38,820.09	$42,644.87	607.8989	0.0000	682670.4647	$81,464.96
13071	C/SHACK C229 J WHWH	L	EA	CASH	G	1224	$0.00	$0.00	$27,070.04	$29,737.14	388.9216	0.0000	476040.0384	$56,807.18
13100	C/KELV P120 J WHWH V802	E	EA	CAXP	G	271	$0.00	$0.00	$4,533.48	$4,980.15	294.1827	0.0000	79723.5117	$9,513.63
13101	C/KELV P190 J WHWH V802	E	EA	CAXP	G	134	$0.00	$0.00	$2,556.49	$2,808.36	335.5004	0.0000	44957.0536	$5,364.85
13102	C/KELV C170T J WHWH V802	E	EA	CAXP	G	2120	$0.00	$0.00	$54,169.30	$59,506.36	449.3367	0.0000	952593.8040	$113,675.66
13103	C/KELV C380B J WHWH V802	E	EA	CAXP	G	299	$0.00	$0.00	$9,317.13	$10,235.11	547.9813	0.0000	163846.4087	$19,552.24
13104	C/KELV C410B J WHWH V802	E	EA	CAXP	G	202	$0.00	$0.00	$6,286.45	$6,905.82	547.2785	0.0000	110550.2570	$13,192.27
13105	C/FRIG P120 J WHWH V802	E	EA	CAXP	G	54	$0.00	$0.00	$903.35	$992.35	294.1827	0.0000	15885.8658	$1,895.70
13106	C/FRIG C170T J WHWH V802	E	EA	CAXP	G	241	$0.00	$0.00	$6,157.92	$6,764.64	449.3367	0.0000	108290.1447	$12,922.56
13107	C/FRIG C250T J WHWH V802	E	EA	CAXP	G	65	$0.00	$0.00	$3,109.93	$3,416.34	841.3787	0.0000	54689.6155	$6,526.27
13108	C/FRIG C335T J WHWH V802	E	EA	CAXP	G	116	$0.00	$0.00	$3,461.74	$3,802.81	524.7967	0.0000	60876.4172	$7,264.55
13109	C/FRIG C390T J WHWH V802	E	EA	CAXP	G	61	$0.00	$0.00	$1,908.38	$2,096.40	550.1594	0.0000	33559.7234	$4,004.78
13113	C/FRIG N400H J WHWH V802	E	EA	CAXP	G	3	$0.00	$0.00	$122.20	$134.24	716.2962	0.0000	2148.8886	$256.44
13114	C/KELV N375T J WHWH V802	E	EA	CAXP	G	621	$0.00	$0.00	$21,036.93	$23,109.61	595.7243	0.0000	369944.7903	$44,146.54
13115	C/KELV N395B J WHWH V802	E	EA	CAXP	G	372	$0.00	$0.00	$13,105.31	$14,396.52	619.5253	0.0000	230463.4116	$27,501.83
13116	C/KELV N405T J WHWH V802	E	EA	CAXP	G	189	$0.00	$0.00	$6,544.88	$7,189.72	608.9678	0.0000	115094.9142	$13,734.60

PART NUMBER	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	HF MAN COSTS	HF ASSY COST	RF MAN COST	RF ASSY COST	COMPONENT COUNT	HF PRODN ADJ FOR COMPONENTS	RF PRODN ADJ FOR COMPONENTS	TOTAL PROD COST
13117	C/KELV N400H J WHWH V802	E	EA	CAXP	G	10	$0.00	$0.00	$407.32	$447.45	716.2962	0.0000	7162.9620	$854.77
13118	C/KELV N375T J ALAL V802	E	EA	CAXP	G	492	$0.00	$0.00	$16,666.94	$18,309.06	595.7243	0.0000	293096.3556	$34,976.00
13119	C/KELV N395B J ALAL V802	E	EA	CAXP	G	325	$0.00	$0.00	$11,449.54	$12,577.61	619.5253	0.0000	201345.7225	$24,027.15
13121	C/KELV N400H J ALAL V802	E	EA	CAXP	G	869	$0.00	$0.00	$35,396.30	$38,883.75	716.2962	0.0000	622461.3978	$74,280.05
13122	C/KELV F160 J WHWH V802	E	EA	CAXP	G	214	$0.00	$0.00	$8,335.06	$9,156.28	684.9354	0.0000	146576.1756	$17,491.34
13123	C/KELV F230 J WHWH V802	E	EA	CAXP	G	81	$0.00	$0.00	$2,055.49	$2,258.00	446.2559	0.0000	36146.7279	$4,313.49
13124	C/KELV F310 J WHWH V802	E	EA	CAXP	G	500	$0.00	$0.00	$12,031.59	$13,217.01	423.1629	0.0000	211581.4500	$25,248.60
13125	C/FRIG F160 J WHWH V802	E	EA	CAXP	G	100	$0.00	$0.00	$3,894.89	$4,278.64	684.9354	0.0000	68493.5400	$8,173.53
13126	C/FRIG F230 J WHWH V802	E	EA	CAXP	G	21	$0.00	$0.00	$532.90	$585.41	446.2559	0.0000	9371.3739	$1,118.31
13127	C/FRIG F310 J WHWH V802	E	EA	CAXP	G	47	$0.00	$0.00	$1,130.97	$1,242.40	423.1629	0.0000	19888.6563	$2,373.37
13128	C/KELV C335T J WHWH V802	E	EA	CAXP	G	1560	$0.00	$0.00	$46,554.45	$51,141.25	524.7967	0.0000	818682.8520	$97,695.70
13129	C/KELV C390T J WHWH V802	E	EA	CAXP	G	495	$0.00	$0.00	$15,486.00	$17,011.77	550.1594	0.0000	272328.9030	$32,497.77
13130	C/LEON C335T J WHWH V802	E	EA	CAXP	G	20	$0.00	$0.00	$596.85	$655.66	524.7967	0.0000	10495.9340	$1,252.51
13135	C/LEON C335T J ALAL V802	E	EA	CAXP	G	264	$0.00	$0.00	$7,878.44	$8,654.67	524.7967	0.0000	138546.3288	$16,533.11
13140	C/KELV C370 J WHWH V802	E	EA	CAXP	G	9	$0.00	$0.00	$218.03	$239.51	426.0117	0.0000	3834.1053	$457.54
13142	C/LEON F310 J WHWH V802	E	EA	CAXP	G	3	$0.00	$0.00	$72.19	$79.30	423.1629	0.0000	1269.4887	$151.49
13143	C/FRIG P190 J WHWH V802	E	EA	CAXP	G	9	$0.05	$0.00	$171.75	$188.66	335.5004	0.0000	3019.5036	$360.46
						134608	$1,517,898.69	$1,481,787.27	$2,986,534.99	$3,280,785.39	84797.1303	12061836.0356	52519689.2378	$9,267,006.34
Appendix No. 9 Source Code G - 4						66828	$503,168.31	$491,197.73	$1,816,539.01	$1,995,514.61	78746.2840	3998378.4988	31944733.2290	$4,806,419.66
						201436	$2,021,067.00	$1,972,985.00	$4,803,074.00	$5,276,300.00	163543.4143	16060214.5344	84464422.4668	$14,073,426.00

PART NUMBER	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	HF MAN COSTS	HF ASSY COST	RF MAN COSTS	RF ASSY COST	COMPONENT COUNT	HF PRODN. ADJ FOR COMPONENTS	RF PRODN. ADJ FOR COMPONENTS	TOTAL PROD COST
13144	C/FRIG C420T J WHWH V802	E	EA	CAXP	G	10	$0.00	$0.00	$314.21	$345.17	552.5586	0.0000	5525.5860	$659.38
13145	C/KELV F310 J WHWH V810	E	EA	CAXP	G	35	$0.00	$0.00	$842.21	$925.19	423.1629	0.0000	14810.7015	$1,767.40
13146	C/KELV C250T J WHWH V802	E	EA	CAXP	G	1410	$0.00	$0.00	$67,461.51	$74,108.20	841.3787	0.0000	1186343.9670	$141,569.71
13147	C/LEON C170T J WHWH V802	E	EA	CAXP	G	18	$0.00	$0.00	$459.93	$505.24	449.3367	0.0000	8088.0606	$965.17
13148	C/LEON C390T J WHWH V802	E	EA	CAXP	G	6	$0.00	$0.00	$187.71	$206.20	550.1594	0.0000	3300.9564	$393.91
13149	C/LEON C410B J WHWH V802	E	EA	CAXP	G	8	$0.00	$0.00	$248.97	$273.50	547.2785	0.0000	4378.2280	$522.47
13150	C/SHACK P190 J WHWH V802	E	EA	CAXP	G	41	$0.00	$0.00	$782.21	$859.28	335.5004	0.0000	13755.5164	$1,641.49
13151	C/KELV P120 J WHWH V803	E	EA	CAXP	G	40	$0.00	$0.00	$669.15	$735.08	294.1827	0.0000	11767.3080	$1,404.23
13152	C/LEON C250T J WHWH V802	E	EA	CAXP	G	8	$0.00	$0.00	$382.76	$420.47	841.3787	0.0000	6731.0296	$803.23
13153	C/KELV F160 J WHWH V803	E	EA	CAXP	G	19	$0.00	$0.00	$740.03	$812.94	684.9354	0.0000	13013.7726	$1,552.97
13154	C/KELV N405T J WHWH V803	E	EA	CAXP	G	377	$0.00	$0.00	$13,055.13	$14,341.39	608.9678	0.0000	229580.8606	$27,396.52
13155	C/KELV N395B J WHWH V803	E	EA	CAXP	G	98	$0.00	$0.00	$3,452.48	$3,792.63	619.5253	0.0000	60713.4794	$7,245.11
13157	C/KELV C335T J WHWH V803	E	EA	CAXP	G	112	$0.00	$0.00	$3,342.37	$3,671.68	524.7967	0.0000	58777.2304	$7,014.05
13158	C/SHACK P120 H WWWW V802	E	EA	CAXP	G	84	$0.00	$0.00	$1,405.21	$1,543.66	294.1827	0.0000	24711.3468	$2,948.87
13159	C/SHACK C170T H WWWW V802	E	EA	CAXP	G	124	$0.00	$0.00	$3,168.39	$3,480.56	449.3367	0.0000	55717.7508	$6,648.95
13160	C/SHACK C250T H WWWW V802	E	EA	CAXP	G	108	$0.00	$0.00	$5,167.26	$5,676.37	841.3787	0.0000	90868.8996	$10,843.63
13161	C/SHACK C270 H WWWW V802	E	EA	CAXP	G	29	$0.00	$0.00	$604.82	$664.41	366.7612	0.0000	10636.0748	$1,269.23
13162	C/SHACK C335T H WWWW V802	E	EA	CAXP	G	148	$0.00	$0.00	$4,416.70	$4,851.86	524.7967	0.0000	77669.9116	$9,268.56
13163	C/SHACK C370 H WWWW V802	E	EA	CAXP	G	73	$0.00	$0.00	$1,768.44	$1,942.67	426.0117	0.0000	31098.8541	$3,711.11
13164	C/SHACK C380B H WWWW V802	E	EA	CAXP	G	114	$0.00	$0.00	$3,552.35	$3,902.35	547.9813	0.0000	62469.8682	$7,454.70
13165	C/SHACK C390T H WWWW V802	E	EA	CAXP	G	149	$0.00	$0.00	$4,661.44	$5,120.71	550.1594	0.0000	81973.7506	$9,782.15
13166	C/SHACK C410B H WWWW V802	E	EA	CAXP	G	81	$0.00	$0.00	$2,520.80	$2,769.17	547.2785	0.0000	44329.5585	$5,289.97
13167	C/SHACK F230 H WWWW V802	E	EA	CAXP	G	29	$0.00	$0.00	$735.91	$808.42	446.2559	0.0000	12941.4211	$1,544.33
13168	C/SHACK F310 H WWWW V802	E	EA	CAXP	G	140	$0.00	$0.00	$3,368.85	$3,700.76	423.1629	0.0000	59242.8060	$7,069.61
13169	C/SHACK N375T H WWWW V802	E	EA	CAXP	G	497	$0.00	$0.00	$16,836.32	$18,495.13	595.7243	0.0000	296074.9771	$35,331.45
13170	C/SHACK N395B H WWWW V802	E	EA	CAXP	G	13	$0.00	$0.00	$457.98	$503.10	619.5253	0.0000	8053.8289	$961.08
13173	C/FRIG N395B J ALAL V802	E	EA	CAXP	G	8	$0.00	$0.00	$281.83	$309.60	619.5253	0.0000	4956.2024	$591.43
13176	C/SHACK C250T J FAFA V802	E	EA	CAXP	G	542	$0.00	$0.00	$25,932.01	$28,486.98	841.3787	0.0000	456027.2554	$54,418.99
13177	C/SHACK C170T J FAFA V802	E	EA	CAXP	G	262	$0.00	$0.00	$6,694.51	$7,354.09	449.3367	0.0000	117726.2154	$14,048.60
13179	C/FRIG C380B J WHWH V802	E	EA	CAXP	G	54	$0.00	$0.00	$1,682.69	$1,848.48	547.9813	0.0000	29590.9902	$3,531.17
13180	C/FRIG C410B J WHWH V802	E	EA	CAXP	G	36	$0.00	$0.00	$1,120.36	$1,230.74	547.2785	0.0000	19702.0260	$2,351.10
13181	C/KELV C365H J WHWH V802	E	EA	CAXP	G	37	$0.00	$0.00	$1,133.57	$1,245.25	538.7660	0.0000	19934.3420	$2,378.82
13182	C/KELV C170T J WHWH V803	E	EA	CAXP	G	51	$0.00	$0.00	$1,303.13	$1,431.52	449.3367	0.0000	22916.1717	$2,734.65
13183	C/KELV C250T J WHWH V803	E	EA	CAXP	G	48	$0.00	$0.00	$2,296.56	$2,522.83	841.3787	0.0000	40386.1776	$4,819.39
13184	C/SHACK C190 H WWWW V802	E	EA	CAXP	G	47	$0.00	$0.00	$887.47	$974.91	332.0560	0.0000	15606.6320	$1,862.38
13186	C/KELV C380B J WHWH V803	E	EA	CAXP	G	82	$0.00	$0.00	$2,555.20	$2,806.95	547.9813	0.0000	44934.4666	$5,362.15
13187	C/KELV N375T J WHWH V803	E	EA	CAXP	G	492	$0.00	$0.00	$16,666.94	$18,309.06	595.7243	0.0000	293096.3556	$34,976.00
13188	C/KELV C410B J WHWH V803	E	EA	CAXP	G	54	$0.00	$0.00	$1,680.54	$1,846.11	547.2785	0.0000	29553.0390	$3,526.65
13189	C/KELV N400H J WHWH V803	E	EA	CAXP	G	435	$0.00	$0.00	$17,718.52	$19,464.25	716.2962	0.0000	311588.8470	$37,182.77
13190	C/KELV F310 J WHWH V803	E	EA	CAXP	G	3	$0.00	$0.00	$72.19	$79.30	423.1629	0.0000	1269.4887	$151.49
13191	C/KELV C420T J WHWH V802	E	EA	CAXP	G	122	$0.00	$0.00	$3,833.40	$4,211.08	552.5586	0.0000	67412.1492	$8,044.48
13195	C/LEON C370 J WHWH V802	E	EA	CAXP	G	3	$0.00	$0.00	$72.68	$79.84	426.0117	0.0000	1278.0351	$152.52
13198	C/KELV C190 J WHWH V802	E	EA	CAXP	G	181	$0.00	$0.00	$3,417.71	$3,754.44	332.0560	0.0000	60102.1360	$7,172.15
13199	C/KELV C270 J WHWH V802	E	EA	CAXP	G	123	$0.00	$0.00	$2,565.28	$2,818.02	366.7612	0.0000	45111.6276	$5,383.30
13200	C/SHACK C420T H WWWW V802	E	EA	CAXP	G	30	$0.00	$0.00	$942.64	$1,035.51	552.5586	0.0000	16576.7580	$1,978.15
13201	C/SHACK N400H H WWWW V802	E	EA	CAXP	G	875	$0.00	$0.00	$35,640.69	$39,152.22	716.2962	0.0000	626759.1750	$74,792.91
13202	C/SHACK N395B J ALAL V802	E	EA	CAXP	G	5	$0.00	$0.00	$176.15	$193.50	619.5253	0.0000	3097.6265	$369.65
13203	C/SHACK N405T J ALAL V802	E	EA	CAXP	G	377	$0.00	$0.00	$13,055.13	$14,341.39	608.9678	0.0000	229580.8606	$27,396.52
13205	C/F&P N369B H WWWW	L	EA	CAFR	G	641	$0.00	$0.00	$22,158.22	$24,341.37	607.8989	0.0000	389663.1949	$46,499.59
13209	C/KELV C120 J WHWH V803	E	EA	CAXP	G	79	$0.00	$0.00	$1,411.69	$1,550.77	314.2429	0.0000	24825.1891	$2,962.46
13212	C/LEON C365H J WHWH V802	E	EA	CAXP	G	5	$0.00	$0.00	$153.18	$168.28	538.7660	0.0000	2693.8300	$321.46
13215	C/KELV N375T J SASA V802	E	EA	CAXP	G	369	$0.00	$0.00	$12,500.21	$13,731.80	595.7243	0.0000	219822.2667	$26,232.01
13216	C/KELV N395B J SASA V802	E	EA	CAXP	G	263	$0.00	$0.00	$9,265.32	$10,178.19	619.5253	0.0000	162935.1539	$19,443.51
13217	C/KELV N405T J SASA V802	E	EA	CAXP	G	315	$0.00	$0.00	$10,908.13	$11,982.86	608.9678	0.0000	191824.8570	$22,890.99

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13218	C/KELV N400H J SASA V802	E	EA	CAXP	G	725	$0.00	$0.00	$29,530.86	$32,440.41	716.2962	0.0000	519314.7450	$61,971.27
13220	C/FRIG N395B J SASA V802	E	EA	CAXP	G	12	$0.00	$0.00	$422.75	$464.40	619.5253	0.0000	7434.3036	$887.15
13223	C/LEON C380B J WHWH V802	E	EA	CAXP	G	6	$0.00	$0.00	$186.97	$205.39	547.9813	0.0000	3287.8878	$392.36
13226	C/SHACK F230 H WWWW V803	E	EA	CAXP	G	16	$0.00	$0.00	$406.02	$446.03	446.2559	0.0000	7140.0944	$852.05
13227	C/FRIG C190 J WHWH V802	E	EA	CAXP	G	17	$0.00	$0.00	$321.00	$352.63	332.0560	0.0000	5644.9520	$673.63
13228	C/KELV N375T J WHWH V814	E	EA	CAXP	G	39	$0.00	$0.00	$1,321.16	$1,451.33	595.7243	0.0000	23233.2477	$2,772.49
13229	C/KELV N405T J WHWH V814	E	EA	CAXP	G	3	$0.00	$0.00	$103.89	$114.12	608.9678	0.0000	1826.9034	$218.01
13230	C/KELV N400H J WHWH V814	E	EA	CAXP	G	46	$0.00	$0.00	$1,873.68	$2,058.29	716.2962	0.0000	32949.6252	$3,931.97
13231	C/KELV N375T J ALAL V814	E	EA	CAXP	G	35	$0.00	$0.00	$1,185.66	$1,302.47	595.7243	0.0000	20850.3505	$2,488.13
13232	C/KELV N405T J ALAL V814	E	EA	CAXP	G	2	$0.00	$0.00	$69.26	$76.08	608.9678	0.0000	1217.9356	$145.34
13233	C/KELV N400H J ALAL V814	E	EA	CAXP	G	45	$0.00	$0.00	$1,832.95	$2,013.54	716.2962	0.0000	32233.3290	$3,846.49
13234	C/KELV N375T J SASA V814	E	EA	CAXP	G	15	$0.00	$0.00	$508.14	$558.20	595.7243	0.0000	8935.8645	$1,066.34
13235	C/KELV N405T J SASA V814	E	EA	CAXP	G	2	$0.00	$0.00	$69.26	$76.08	608.9678	0.0000	1217.9356	$145.34
13236	C/KELV N400H J SASA V814	E	EA	CAXP	G	17	$0.00	$0.00	$692.45	$760.67	716.2962	0.0000	12177.0354	$1,453.12
13242	C/FRIG N400H J ALAL V814	E	EA	CAXP	G	12	$0.00	$0.00	$488.79	$536.94	716.2962	0.0000	8595.5544	$1,025.73
13245	C/FRIG N400H J SASA V814	E	EA	CAXP	G	18	$0.00	$0.00	$733.18	$805.42	716.2962	0.0000	12893.3316	$1,538.60
13248	C/LEON N375T J ALAL V814	E	EA	CAXP	G	50	$0.00	$0.00	$1,693.79	$1,860.68	595.7243	0.0000	29786.2150	$3,554.47
13252	C/LEON C250T J FAFA V802	E	EA	CAXP	G	30	$0.00	$0.00	$1,435.35	$1,576.77	841.3787	0.0000	25241.3610	$3,012.12
13253	C/LEON C335T J SASA V802	E	EA	CAXP	G	152	$0.00	$0.00	$4,536.07	$4,982.99	524.7967	0.0000	79769.0984	$9,519.06
13254	C/LEON N400H J SASA V814	E	EA	CAXP	G	45	$0.00	$0.00	$1,832.95	$2,013.54	716.2962	0.0000	32233.3290	$3,846.49
13255	C/LEON N375T J SASA V814	E	EA	CAXP	G	45	$0.00	$0.00	$1,524.42	$1,674.61	595.7243	0.0000	26807.5935	$3,199.03
13257	C/KELV F310 J ALAL V802	E	EA	CAXP	G	5	$0.00	$0.00	$120.32	$132.17	423.1629	0.0000	2115.8145	$252.49
13258	C/SHACK N395B J SASA V802	E	EA	CAXP	G	5	$0.00	$0.00	$176.15	$193.50	619.5253	0.0000	3097.6265	$369.65
13259	C/SHACK N375T H WWWW V814	E	EA	CAXP	G	5	$0.00	$0.00	$169.38	$186.07	595.7243	0.0000	2978.6215	$355.45
13260	C/SHACK N405T H WWWW V814	E	EA	CAXP	G	8	$0.00	$0.00	$277.03	$304.33	608.9678	0.0000	4871.7424	$581.36
13261	C/SHACK N400H H WWWW V814	E	EA	CAXP	G	8	$0.00	$0.00	$325.86	$357.96	716.2962	0.0000	5730.3696	$683.82
13262	C/SHACK N375T J ALAL V814	E	EA	CAXP	G	2	$0.00	$0.00	$67.75	$74.43	595.7243	0.0000	1191.4486	$142.18
13263	C/SHACK N405T J ALAL V814	E	EA	CAXP	G	6	$0.00	$0.00	$207.77	$228.24	608.9678	0.0000	3653.8068	$436.01
13264	C/SHACK N400H J ALAL V814	E	EA	CAXP	G	6	$0.00	$0.00	$244.39	$268.47	716.2962	0.0000	4297.7772	$512.86
13265	C/SHACK N375T J SASA V814	E	EA	CAXP	G	3	$0.00	$0.00	$101.63	$111.64	595.7243	0.0000	1787.1729	$213.27
13266	C/SHACK N405T J SASA V814	E	EA	CAXP	G	6	$0.00	$0.00	$207.77	$228.24	608.9678	0.0000	3653.8068	$436.01
13267	C/SHACK N400H J SASA V814	E	EA	CAXP	G	6	$0.00	$0.00	$244.39	$268.47	716.2962	0.0000	4297.7772	$512.86
15352	C/F&P N375T H WWWW	L	EA	CAFP	G	225	$0.00	$0.00	$7,622.08	$8,373.05	595.7243	0.0000	134037.9675	$15,995.13
15354	C/F&P N400H H WWWW	L	EA	CAFP	G	218	$0.00	$0.00	$8,879.62	$9,754.50	716.2962	0.0000	156152.5716	$18,634.12
15355	C/F&P N395B H WWWW	L	EA	CAFP	G	666	$0.00	$0.00	$23,462.74	$25,774.42	619.5253	0.0000	412603.8498	$49,237.16
15811	C/F&P C365H H WWWW V812	E	EA	CAAU	G	310	$0.00	$0.00	$9,497.46	$10,433.20	538.7660	0.0000	167017.4600	$19,930.66
15813	C/SHACK C365H J WHWH	L	EA	CASH	G	427	$0.00	$0.00	$13,081.98	$14,370.89	538.7660	0.0000	230053.0820	$27,452.87
15814	C/F&P H160E J WHWH V812	E	EA	CAAU	G	1637	$72,029.86	$70,316.24	$0.00	$0.00	349.6508	572378.3596	0.0000	$142,346.10
15815	C/F&P H220E J WHWH V812	E	EA	CAAU	G	1089	$49,048.90	$47,882.01	$0.00	$0.00	357.9085	389762.3565	0.0000	$96,930.91
15816	C/F&P H360E J WHWH V812	E	EA	CAAU	G	952	$46,844.08	$45,729.64	$0.00	$0.00	391.0105	372241.9960	0.0000	$92,573.72
15817	C/F&P H510E J WHWH V812	E	EA	CAAU	G	485	$27,115.09	$26,470.01	$0.00	$0.00	444.2628	215467.4580	0.0000	$53,585.10
15818	C/F&P H701E J WHWH V812	E	EA	CAAU	G	457	$27,416.54	$26,764.29	$0.00	$0.00	476.7240	217862.8680	0.0000	$54,180.83
15823	C/F&P H160S J WHWH V812	E	EA	CAAU	G	2126	$93,546.42	$91,320.91	$0.00	$0.00	349.6508	743357.6008	0.0000	$184,867.33
15824	C/F&P H220S J WHWH V812	E	EA	CAAU	G	1124	$50,625.31	$49,420.91	$0.00	$0.00	357.9085	402289.1540	0.0000	$100,046.22
15825	C/F&P H360S J WHWH V812	E	EA	CAAU	G	948	$46,647.26	$45,537.50	$0.00	$0.00	391.0105	370677.9540	0.0000	$92,184.76
15826	C/FRIG F310 J SASA	L	EA	CAFR	G	129	$0.00	$0.00	$3,104.15	$3,409.99	423.1629	0.0000	54588.0141	$6,514.14
15827	C/FRIG C370 J SASA	L	EA	CAFR	G	167	$0.00	$0.00	$4,045.60	$4,444.20	426.0117	0.0000	71143.9539	$8,489.80
15828	C/FRIG C365H J SASA	L	EA	CAFR	G	42	$0.00	$0.00	$1,286.75	$1,413.53	538.7660	0.0000	22628.1720	$2,700.28
15829	C/FRIG C335T J SASA	L	EA	CAFR	G	20	$0.00	$0.00	$596.85	$655.66	524.7967	0.0000	10495.9340	$1,252.51
15830	C/FRIG C390T J SASA	L	EA	CAFR	G	6	$0.00	$0.00	$187.71	$206.20	550.1594	0.0000	3300.9564	$393.91
15831	C/FRIG C380B J SASA	L	EA	CAFR	G	325	$0.00	$0.00	$10,127.32	$11,125.12	547.9813	0.0000	178093.9225	$21,252.44
15834	C/FRIG C410B J SASA	L	EA	CAFR	G	11	$0.00	$0.00	$342.33	$376.06	547.2785	0.0000	6020.0635	$718.39
15836	C/KELV C365H J SASA	L	EA	CAKE	G	68	$0.00	$0.00	$2,083.31	$2,288.57	538.7660	0.0000	36636.0880	$4,371.88
15837	C/KELV C390T J SASA	L	EA	CAKE	G	8	$0.00	$0.00	$250.28	$274.94	550.1594	0.0000	4401.2752	$525.22

PART NUMBER	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	HF MAN COSTS	HF ASSY COST	RF MAN COSTS	RF ASSY COST	COMPONENT COUNT	HF PRODN. ADJ FOR COMPONENTS	RF PRODN. ADJ FOR COMPONENTS	TOTAL PROD COST
15840	C/KELV C410B J SASA	L	EA	CAKE	G	17	$0.00	$0.00	$529.06	$581.18	547.2785	0.0000	9303.7345	$1,110.24
15842	C/F&P F310 J WHWH V812	E	EA	CAAU	G	2376	$0.00	$0.00	$57,174.12	$62,807.24	423.1629	0.0000	1005435.0504	$119,981.36
15843	C/F&P C370 J WHWH V812	E	EA	CAAU	G	2807	$0.00	$0.00	$68,000.08	$74,699.83	426.0117	0.0000	1195814.8419	$142,699.91
15844	C/F&P C365H J WHWH V812	E	EA	CAAU	G	547	$0.00	$0.00	$16,758.42	$18,409.55	538.7660	0.0000	294705.0020	$35,167.97
15845	C/F&P C335T J WHWH V812	E	EA	CAAU	G	1827	$0.00	$0.00	$54,522.42	$59,894.27	524.7967	0.0000	958803.5709	$114,416.69
15847	C/F&P C390T J WHWH V812	E	EA	CAAU	G	2501	$0.00	$0.00	$78,243.40	$85,952.38	550.1594	0.0000	1375948.6594	$164,195.78
15848	C/F&P N375T J WHWH V812	E	EA	CAAU	G	1894	$0.00	$0.00	$64,160.94	$70,482.44	595.7243	0.0000	1128301.8242	$134,643.38
15849	C/F&P C380B J WHWH V812	E	EA	CAAU	G	1838	$0.00	$0.00	$57,273.89	$62,916.84	547.9813	0.0000	1007189.6294	$120,190.73
15850	C/F&P C420T J WHWH V812	E	EA	CAAU	G	2011	$0.00	$0.00	$63,188.18	$69,413.84	552.5586	0.0000	1111195.3446	$132,602.02
15852	C/F&P N405T J WHWH V812	E	EA	CAAU	G	1410	$0.00	$0.00	$48,826.87	$53,637.57	608.9678	0.0000	858644.5980	$102,464.44
15853	C/F&P C415H J WHWH V812	E	EA	CAAU	G	792	$0.00	$0.00	$29,375.53	$32,269.77	652.2514	0.0000	516583.1088	$61,645.30
15854	C/F&P N400H J WHWH V812	E	EA	CAAU	G	727	$0.00	$0.00	$29,612.33	$32,529.90	716.2962	0.0000	520747.3374	$62,142.23
15855	C/F&P C410B J WHWH V812	E	EA	CAAU	G	3548	$0.00	$0.00	$110,417.39	$121,296.33	547.2785	0.0000	1941744.1180	$231,713.72
15856	C/F&P N395B J WHWH V812	E	EA	CAAU	G	4513	$0.00	$0.00	$158,990.01	$174,654.61	619.5253	0.0000	2795917.6789	$333,644.62
15857	C/F&P P190 J WHWH V812	E	EA	CAAU	G	112	$0.00	$0.00	$2,136.76	$2,347.29	335.5004	0.0000	37576.0448	$4,484.05
15858	C/F&P C190 J WHWH V812	E	EA	CAAU	G	667	$0.00	$0.00	$12,594.55	$13,835.44	332.0560	0.0000	221481.3520	$26,429.99
15859	C/F&P F160 J WHWH V812	E	EA	CAAU	G	832	$0.00	$0.00	$32,405.48	$35,598.25	684.9354	0.0000	569866.2528	$68,003.73
15860	C/F&P C170T J WHWH V812	E	EA	CAAU	G	1090	$0.00	$0.00	$27,851.20	$30,595.25	449.3367	0.0000	489777.0030	$58,446.45
15861	C/F&P C270 J WHWH V812	E	EA	CAAU	G	1997	$0.00	$0.00	$41,649.22	$45,752.74	366.7612	0.0000	732422.1164	$87,401.96
15862	C/F&P F230 J WHWH V812	E	EA	CAAU	G	1752	$0.00	$0.00	$44,459.39	$48,839.78	446.2559	0.0000	781840.3368	$93,299.17
15863	C/F&P C250T J WHWH V812	E	EA	CAAU	G	1977	$0.00	$0.00	$94,589.66	$103,909.16	841.3787	0.0000	1663405.6899	$198,498.82
15864	C/F&P C240B J WHWH V812	E	EA	CAAU	G	2137	$0.00	$0.00	$59,562.86	$65,431.33	490.1461	0.0000	1047442.2157	$124,994.19
15865	C/FRIG C389T J WHWH	L	EA	CAFR	G	68	$0.00	$0.00	$2,127.37	$2,336.97	550.1594	0.0000	37410.8392	$4,464.34
15866	C/KELV C389T J WHWH	L	EA	CAKE	G	109	$0.00	$0.00	$3,410.05	$3,746.03	550.1594	0.0000	59967.3746	$7,156.08
15867	C/SHACK C370 J WH	L	EA	CASH	G	40	$0.00	$0.00	$969.01	$1,064.48	426.0117	0.0000	17040.4680	$2,033.49
15869	C/SHACK F310 J WH	L	EA	CASH	G	20	$0.00	$0.00	$481.26	$528.68	423.1629	0.0000	8463.2580	$1,009.94
15870	C/SHACK H360 J WH	L	EA	CASH	G	35	$1,722.21	$1,681.24	$0.00	$0.00	391.0105	13685.3675	0.0000	$3,403.45
15871	C/SHACK H510 J WH	L	EA	CASH	G	5	$279.54	$272.89	$0.00	$0.00	444.2628	2221.3140	0.0000	$552.43
15872	C/F&P N369B H WWWW V812	E	EA	CAAU	G	1449	$0.00	$0.00	$50,089.33	$55,024.41	607.8989	0.0000	880845.5061	$105,113.74
15873	C/SHACK C120 J WH	L	EA	CASH	G	104	$0.00	$0.00	$1,858.42	$2,041.52	314.2429	0.0000	32681.2616	$3,899.94
15874	C/F&P P120 J WEWH V812	E	EA	CAAU	G	168	$0.00	$0.00	$2,810.42	$3,087.32	294.1827	0.0000	49422.6936	$5,897.74
15875	C/KELV N369B J SASA	L	EA	CAKE	G	180	$0.00	$0.00	$6,222.28	$6,835.33	607.8989	0.0000	109421.8020	$13,057.61
15876	C/FRIG N369B J SASA	L	EA	CAFR	G	120	$0.00	$0.00	$4,148.18	$4,556.89	607.8989	0.0000	72947.8680	$8,705.07
NH360S	M/SANDEN H360	L	EA	C800	G	1264	$87,893.10	$85,802.09	$0.00	$0.00	552.5586	698434.0704	0.0000	$173,695.19
UNALLH	UNALLOCATED HF M/S PARTS NO'S	L	EA	CAHF	G	1400	$0.00	$0.00	$43,989.78	$48,323.91	552.5586	0.0000	773582.0400	$92,313.69
UNALLR	UNALLOCATED RF M/S PARTS NO'S	L	EA	CARF	G	2352	$0.00	$0.00	$73,902.84	$81,184.16	552.5586	0.0000	1299617.8272	$155,087.00
						66828	$503,168.31	$491,197.73	$1,816,539.01	$1,995,514.61	78746.2840	3998378.4988	31944733.2290	$4,806,419.66

F = FREEZER, A = AWARD SERIES, C = COMPACT SERIES

PART NUMBER	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	ENG 1 COSTS	ENG 1 TRX	ENG 2 COST	ENG 2 TRX	ENG 3 COSTS	ENG 3 TRX F	ENG 4 COST	ENG 4 TRX C	ENG 5 COST	ENG 5 TRX A	ENG 6 COST	ENG 6 TRX F	C D	TOTAL COSTS
12500	C/KELV H160SL J WHWH V802	E	EA	CAXP	G	42	$0.00	0	$0.00	0									F	$0.00
12501	C/KELV H220SL J WHWH V802	E	EA	CAXP	G	15	$0.00	0	$0.00	0									F	$0.00
12502	C/KELV H360SL J WHWH V802	E	EA	CAXP	G	15	$0.00	0	$0.00	0									F	$0.00
12503	C/KELV H510SL J WHWH V802	E	EA	CAXP	G	8	$0.00	0	$0.00	0									F	$0.00
12504	C/KELV H701SL J WHWH V802	E	EA	CAXP	G	9	$0.00	0	$0.00	0									F	$0.00
12505	C/KELV H220EL J WHWH V802	E	EA	CAXP	G	174	$0.00	0	$0.00	0									F	$0.00
12506	C/KELV H360EL J WHWH V802	E	EA	CAXP	G	200	$0.00	0	$0.00	0									F	$0.00
12508	C/KELV H510EL J WHWH V802	E	EA	CAXP	G	130	$0.00	0	$0.00	0									F	$0.00
12509	C/KELV H701EL J WHWH V802	E	EA	CAXP	G	5	$0.00	0	$0.00	0									F	$0.00
12512	C/KELV H360EL J WHWH V810	E	EA	CAXP	G	287	$0.00	0	$0.00	0									F	$0.00
12515	C/SHARP H160EL J WHWH V810	E	EA	CAXP	G	576	$0.00	0	$0.00	0									F	$0.00
12516	C/SHARP H220EL J WHWH V810	E	EA	CAXP	G	4265	$0.00	0	$0.00	0									F	$0.00
12518	C/SHACK H220SL J WHWH V810	E	EA	CAXP	G	3494	$0.00	0	$0.00	0									F	$0.00
12519	C/SHACK H360SL J WHWH V810	E	EA	CAXP	G	1428	$0.00	0	$0.00	0									F	$0.00
12520	C/SHACK H510SL J WHWH V810	E	EA	CAXP	G	1021	$0.00	0	$0.00	0									F	$0.00
12521	C/SHACK H701SL J WHWH V810	E	EA	CAXP	G	1175	$0.00	0	$0.00	0									F	$0.00
12522	C/SHACK H701SL J WHWH V802	E	EA	CAXP	G	881	$0.00	0	$0.00	0									F	$0.00
12524	C/SHACK H220SL J WHWH V802	E	EA	CAXP	G	697	$0.00	0	$0.00	0									F	$0.00
12525	C/SHACK H360SL J WHWH V802	E	EA	CAXP	G	766	$0.00	0	$0.00	0									F	$0.00
12526	C/SHACK H510SL J WHWH V802	E	EA	CAXP	G	489	$0.00	0	$0.00	0									F	$0.00
12527	C/SHARP H360EL J WHWH V810	E	EA	CAXP	G	659	$0.00	0	$0.00	0									F	$0.00
12528	C/SHACK H160SL J WHWH V803	E	EA	CAXP	G	127	$0.00	0	$0.00	0									F	$0.00
12530	C/SHACK H360SL J WHWH V803	E	EA	CAXP	G	536	$0.00	0	$0.00	0									F	$0.00
12531	C/SHACK H701SL J WHWH V803	E	EA	CAXP	G	104	$0.00	0	$0.00	0									F	$0.00
12532	C/SHACK H510SL J WHWH V803	E	EA	CAXP	G	147	$0.00	0	$0.00	0									F	$0.00
12533	C/KELV H510SL J WHWH V803	E	EA	CAXP	G	3	$0.00	0	$0.00	0									F	$0.00
12534	C/KELV H360SL J WHWH V803	E	EA	CAXP	G	6	$0.00	0	$0.00	0									F	$0.00
12535	C/KELV H220SL J WHWH V803	E	EA	CAXP	G	272	$0.00	0	$0.00	0									F	$0.00
12536	C/KELV H160SL J WHWH V803	E	EA	CAXP	G	43	$0.00	0	$0.00	0									F	$0.00
12537	C/KELV H220EL J WHWH V803	E	EA	CAXP	G	23	$0.00	0	$0.00	0									F	$0.00
12538	C/KELV H360EL J WHWH V803	E	EA	CAXP	G	38	$0.00	0	$0.00	0									F	$0.00
12539	C/KELV H510EL J WHWH V803	E	EA	CAXP	G	16	$0.00	0	$0.00	0									F	$0.00
12540	C/FRIG H360EL J WHWH V813	E	EA	CAXP	G	96	$0.00	0	$0.00	0									F	$0.00
12541	C/FRIG H510EL J WHWH V813	E	EA	CAXP	G	41	$0.00	0	$0.00	0									F	$0.00
12542	C/FRIG H701EL J WHWH V813	E	EA	CAXP	G	52	$0.00	0	$0.00	0									F	$0.00
12545	C/KELV H701SL J WHWH V803	E	EA	CAXP	G	5	$0.00	0	$0.00	0									F	$0.00
12552	C/KELV H160EL J WHWH V802	E	EA	CAXP	G	2	$0.00	0	$0.00	0									F	$0.00
12854	C/FRIG F310 J WHWH	L	EA	CAFR	G	1228	$0.00	0	$4,854.82	1228									A	$4,854.82
12855	C/FRIG C370 J WHWH	L	EA	CAFR	G	1656	$0.00	0	$6,546.89	1656									A	$6,546.89
12856	C/FRIG C365H J WHWH	L	EA	CAFR	G	429	$0.00	0	$1,696.02	429									A	$1,696.02
12857	C/FRIG C335T J WHWH	L	EA	CAFR	G	1610	$0.00	0	$6,365.03	1610									A	$6,365.03
12859	C/FRIG C390T J WHWH	L	EA	CAFR	G	636	$0.00	0	$2,514.39	636									A	$2,514.39
12860	C/FRIG N375T J SASA	L	EA	CAFR	G	8	$0.00	0	$31.63	8									A	$31.63
12861	C/FRIG C380B J WHWH	L	EA	CAFR	G	3062	$0.00	0	$12,105.43	3062									A	$12,105.43
12865	C/FRIG N400H J SASA	L	EA	CAFR	G	8	$0.00	0	$31.63	8									A	$31.63
12866	C/FRIG C410B J WHWH	L	EA	CAFR	G	913	$0.00	0	$3,609.49	913									A	$3,609.49
12867	C/FRIG N395B J SASA	L	EA	CAFR	G	203	$0.00	0	$802.55	203									A	$802.55
12868	C/KELV F310 J SASA	L	EA	CAKE	G	201	$0.00	0	$794.64	201									A	$794.64
12869	C/KELV C370 J SASA	L	EA	CAKE	G	275	$0.00	0	$1,087.20	275									A	$1,087.20
12870	C/KELV C365H J WHWH	L	EA	CAKE	G	690	$0.00	0	$2,727.87	690									A	$2,727.87
12871	C/KELV C335T J SASA	L	EA	CAKE	G	30	$0.00	0	$118.60	30									A	$118.60
12873	C/KELV C390T J WHWH	L	EA	CAKE	G	1030	$0.00	0	$4,072.04	1030									A	$4,072.04

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PART NUMBER	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	ENG 1 COSTS	ENG 1 TRX	ENG 2 COST	ENG 2 TRX	ENG 3 COSTS	ENG 3 TRX F	ENG 4 COST	ENG 4 TRX C	ENG 5 COST	ENG 5 TRX A	ENG 6 COST	ENG 6 TRX F	C D	TOTAL COSTS
12874	C/KELV N375T J SASA	L	EA	CAKE	G	12	$0.00	0	$47.44	12									A	$47.44
12875	C/KELV C380B J SASA	L	EA	CAKE	G	532	$0.00	0	$2,103.23	532									A	$2,103.23
12879	C/KELV N400H J SASA	L	EA	CAKE	G	14	$0.00	0	$55.35	14									A	$55.35
12880	C/KELV C410B J WHWH	L	EA	CAKE	G	1482	$0.00	0	$5,858.99	1482									A	$5,858.99
12881	C/KELV N395B J SASA	L	EA	CAKE	G	377	$0.00	0	$1,490.45	377									A	$1,490.45
12882	C/SHACK F310 J WHWH	L	EA	CASH	G	1216	$0.00	0	$4,807.38	1216									A	$4,807.38
12883	C/SHACK C370 J WHWH	L	EA	CASH	G	1898	$0.00	0	$7,503.62	1898									A	$7,503.62
12884	C/FRIG N375T J WHWH	L	EA	CAFR	G	686	$0.00	0	$2,712.06	686									A	$2,712.06
12885	C/SHACK C335T J WHWH	L	EA	CASH	G	1324	$0.00	0	$5,234.35	1324									A	$5,234.35
12887	C/SHACK C390T J WHWH	L	EA	CASH	G	417	$0.00	0	$1,648.58	417									A	$1,648.58
12888	C/SHACK N375T J WHWH	L	EA	CASH	G	372	$0.00	0	$1,470.68	372									A	$1,470.68
12889	C/SHACK C380B J WHWH	L	EA	CASH	G	2313	$0.00	0	$9,144.30	2313									A	$9,144.30
12892	C/SHACK N405T J WHWH	L	EA	CASH	G	470	$0.00	0	$1,858.12	470									A	$1,858.12
12894	C/FRIG N400H J WHWH	L	EA	CAFR	G	838	$0.00	0	$3,312.98	838									A	$3,312.98
12895	C/SHACK C410B J WHWH	L	EA	CASH	G	821	$0.00	0	$3,245.77	821									A	$3,245.77
12896	C/SHACK N395B J WHWH	L	EA	CASH	G	1085	$0.00	0	$4,289.48	1085									A	$4,289.48
12905	C/F&P C415H H WWWW V812	E	EA	CAAU	G	489	$0.00	0	$0.00	0									A	$0.00
12906	C/F&P N395B H WWWW V812	E	EA	CAAU	G	1355	$0.00	0	$0.00	0									A	$0.00
12913	C/F&P N375T H WWWW V812	E	EA	CAAU	G	421	$0.00	0	$0.00	0									A	$0.00
12914	C/F&P N405T H WWWW V812	E	EA	CAAU	G	413	$0.00	0	$0.00	0									A	$0.00
12915	C/F&P N400H H WWWW V812	E	EA	CAAU	G	209	$0.00	0	$0.00	0									A	$0.00
12953	C/FRIG N395B J WHWH	L	EA	CAFR	G	1817	$0.00	0	$7,183.40	1817									A	$7,183.40
12954	C/KELV F310 J WHWH	L	EA	CAKE	G	1931	$0.00	0	$7,634.09	1931									A	$7,634.09
12955	C/KELV C370 J WHWH	L	EA	CAKE	G	2705	$0.00	0	$10,694.05	2705									A	$10,694.05
12956	C/KELV C335T J WHWH	L	EA	CAKE	G	2607	$0.00	0	$10,306.61	2607									A	$10,306.61
12957	C/KELV N375T J WHWH	L	EA	CAKE	G	1115	$0.00	0	$4,408.08	1115									A	$4,408.08
12958	C/KELV C380B J WHWH	L	EA	CAKE	G	4986	$0.00	0	$19,711.84	4986									A	$19,711.84
12960	C/KELV N400H J WHWH	L	EA	CAKE	G	1375	$0.00	0	$5,435.98	1375									A	$5,435.98
12961	C/KELV N395B J WHWH	L	EA	CAKE	G	3440	$0.00	0	$13,599.83	3440									A	$13,599.83
12962	C/KELV P120 J WHWH	L	EA	CAKE	G	2156	$9,445.61	2156	$0.00	0									C	$9,445.61
12963	C/KELV C190 J WHWH	L	EA	CAKE	G	2205	$9,660.28	2205	$0.00	0									C	$9,660.28
12964	C/KELV F160 J WHWH	L	EA	CAKE	G	1397	$6,120.37	1397	$0.00	0									C	$6,120.37
12965	C/KELV C170T J WHWH	L	EA	CAKE	G	3835	$16,801.45	3835	$0.00	0									C	$16,801.45
12966	C/KELV C270 J WHWH	L	EA	CAKE	G	1339	$5,866.27	1339	$0.00	0									C	$5,866.27
12967	C/KELV C250T J WHWH	L	EA	CAKE	G	1316	$5,765.50	1316	$0.00	0									C	$5,765.50
12968	C/KELV C240B J WHWH	L	EA	CAKE	G	4076	$17,857.29	4076	$0.00	0									C	$17,857.29
12969	C/KELV F230 J WHWH	L	EA	CAKE	G	1427	$6,251.80	1427	$0.00	0									C	$6,251.80
12970	C/FRIG P120 J WHWH	L	EA	CAFR	G	1327	$5,813.69	1327	$0.00	0									C	$5,813.69
12971	C/FRIG C190 J WHWH	L	EA	CAFR	G	1369	$5,997.70	1369	$0.00	0									C	$5,997.70
12972	C/FRIG F160 J WHWH	L	EA	CAFR	G	927	$4,061.26	927	$0.00	0									C	$4,061.26
12973	C/FRIG C170T J WHWH	L	EA	CAFR	G	2324	$10,181.63	2324	$0.00	0									C	$10,181.63
12975	C/FRIG C270 J WHWH	L	EA	CAFR	G	804	$3,522.39	804	$0.00	0									C	$3,522.39
12976	C/FRIG C250T J WHWH	L	EA	CAFR	G	788	$3,452.29	788	$0.00	0									C	$3,452.29
12977	C/FRIG C240B J WHWH	L	EA	CAFR	G	2512	$11,005.28	2512	$0.00	0									C	$11,005.28
12978	C/FRIG F230 J WHWH	L	EA	CAFR	G	973	$4,262.79	973	$0.00	0									C	$4,262.79
12980	C/SHACK P120 J WHWH	L	EA	CASH	G	779	$3,412.86	779	$0.00	0									C	$3,412.86
12981	C/SHACK C190 J WHWH	L	EA	CASH	G	1089	$4,771.00	1089	$0.00	0									C	$4,771.00
12982	C/SHACK F160 J WHWH	L	EA	CASH	G	581	$2,545.41	581	$0.00	0									C	$2,545.41
12983	C/SHACK C170T J WHWH	L	EA	CASH	G	1439	$6,304.38	1439	$0.00	0									C	$6,304.38
12985	C/SHACK C270 J WHWH	L	EA	CASH	G	724	$3,171.90	724	$0.00	0									C	$3,171.90
12987	C/SHACK C240B J WHWH	L	EA	CASH	G	1423	$6,234.28	1423	$0.00	0									C	$6,234.28
12988	C/SHACK F230 J WHWH	L	EA	CASH	G	543	$2,378.94	543	$0.00	0									C	$2,378.94

F = FREEZER, A = AWARD SERIES, C = COMPACT SERIES

PART NUMBER	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	ENG 1 COSTS	ENG 1 TRX	ENG 2 COST	ENG 2 TRX	ENG 3 COSTS	ENG 3 TRX F	ENG 4 COST	ENG 4 TRX C	ENG 5 COST	ENG 5 TRX A	ENG 6 COST	ENG 6 TRX F	C D	TOTAL COSTS
12996	C/FRIG H160S J WHWH V802	E	EA	CAXP	G	3	$0.00	0	$0.00	0									F	$0.00
12997	C/FRIG H220S J WHWH V802	E	EA	CAXP	G	13	$0.00	0	$0.00	0									F	$0.00
12998	C/FRIG H360S J WHWH V802	E	EA	CAXP	G	5	$0.00	0	$0.00	0									F	$0.00
13002	C/KELV H160S J WHWH V802	E	EA	CAXP	G	5	$0.00	0	$0.00	0									F	$0.00
13003	C/KELV H220S J WHWH V802	E	EA	CAXP	G	5	$0.00	0	$0.00	0									F	$0.00
13004	C/KELV H360S J WHWH V802	E	EA	CAXP	G	10	$0.00	0	$0.00	0									F	$0.00
13005	C/KELV H510S J WHWH V802	E	EA	CAXP	G	16	$0.00	0	$0.00	0									F	$0.00
13006	C/KELV H701S J WHWH V802	E	EA	CAXP	G	10	$0.00	0	$0.00	0									F	$0.00
13007	C/SHACK H160S J WHWH V802	E	EA	CAXP	G	24	$0.00	0	$0.00	0									F	$0.00
13008	C/SHACK H220S J WHWH V802	E	EA	CAXP	G	27	$0.00	0	$0.00	0									F	$0.00
13009	C/SHACK H360S J WHWH V802	E	EA	CAXP	G	25	$0.00	0	$0.00	0									F	$0.00
13011	C/SHACK H510S J WHWH V802	E	EA	CAXP	G	14	$0.00	0	$0.00	0									F	$0.00
13012	C/SHACK H701S J WHWH V802	E	EA	CAXP	G	16	$0.00	0	$0.00	0									F	$0.00
13013	C/KELV H160E J WHWH	L	EA	CAKE	G	1982	$0.00	0	$0.00	0									F	$0.00
13014	C/KELV H220E J WHWH	L	EA	CAKE	G	1892	$0.00	0	$0.00	0									F	$0.00
13016	C/KELV H360E J WHWH	L	EA	CAKE	G	2012	$0.00	0	$0.00	0									F	$0.00
13017	C/KELV H510E J WHWH	L	EA	CAKE	G	518	$0.00	0	$0.00	0									F	$0.00
13018	C/KELV H701E J WHWH	L	EA	CAKE	G	273	$0.00	0	$0.00	0									F	$0.00
13019	C/SHACK H160E J WHWH	L	EA	CASH	G	320	$0.00	0	$0.00	0									F	$0.00
13020	C/SHACK H220E J WHWH	L	EA	CASH	G	580	$0.00	0	$0.00	0									F	$0.00
13021	C/SHACK H360E J WHWH	L	EA	CASH	G	710	$0.00	0	$0.00	0									F	$0.00
13022	C/SHACK H510E J WHWH	L	EA	CASH	G	301	$0.00	0	$0.00	0									F	$0.00
13023	C/SHACK H701E J WHWH	L	EA	CASH	G	195	$0.00	0	$0.00	0									F	$0.00
13024	C/FRIG H160E J WHWH	L	EA	CAFR	G	1343	$0.00	0	$0.00	0									F	$0.00
13025	C/FRIG H220E J WHWH	L	EA	CAFR	G	1272	$0.00	0	$0.00	0									F	$0.00
13026	C/FRIG H360E J WHWH	L	EA	CAFR	G	1390	$0.00	0	$0.00	0									F	$0.00
13027	C/FRIG H510E J WHWH	L	EA	CAFR	G	351	$0.00	0	$0.00	0									F	$0.00
13028	C/FRIG H701E J WHWH	L	EA	CAFR	G	185	$0.00	0	$0.00	0									F	$0.00
13039	C/F&P F310 H WWWW	L	EA	CAFP	G	358	$0.00	0	$1,415.33	358									A	$1,415.33
13040	C/F&P C370 H WWWW	L	EA	CAFP	G	371	$0.00	0	$1,466.73	371									A	$1,466.73
13041	C/F&P C365H H WWWW	L	EA	CAFP	G	180	$0.00	0	$711.62	180									A	$711.62
13042	C/F&P C335T H WWWW	L	EA	CAAU	G	322	$0.00	0	$1,273.01	322									A	$1,273.01
13043	C/F&P C390T H WWWW	L	EA	CAFP	G	166	$0.00	0	$656.27	166									A	$656.27
13044	C/F&P C380B H WWWW	L	EA	CAFP	G	1057	$0.00	0	$4,178.78	1057									A	$4,178.78
13047	C/F&P C410B H WWWW	L	EA	CAFP	G	226	$0.00	0	$893.48	226									A	$893.48
13056	C/FRIG C240B H WWWW V813	E	EA	CAXP	G	144	$0.00	0	$0.00	0									C	$0.00
13065	C/KELV C229 J WHWH	L	EA	CAKE	G	1650	$0.00	0	$6,523.17	1650									A	$6,523.17
13067	C/KELV N369B J WHWH	L	EA	CAKE	G	1689	$0.00	0	$6,677.36	1689									A	$6,677.36
13068	C/FRIG C229 J WHWH	L	EA	CAFR	G	935	$0.00	0	$3,696.46	935									A	$3,696.46
13070	C/FRIG N369B J WHWH	L	EA	CAFR	G	1123	$0.00	0	$4,439.71	1123									A	$4,439.71
13071	C/SHACK C229 J WHWH	L	EA	CASH	G	1224	$0.00	0	$4,839.01	1224									A	$4,839.01
13100	C/KELV P120 J WHWH V802	E	EA	CAXP	G	271	$0.00	0	$0.00	0									C	$0.00
13101	C/KELV P190 J WHWH V802	E	EA	CAXP	G	134	$0.00	0	$0.00	0									C	$0.00
13102	C/KELV C170T J WHWH V802	E	EA	CAXP	G	2120	$0.00	0	$0.00	0									C	$0.00
13103	C/KELV C380B J WHWH V802	E	EA	CAXP	G	299	$0.00	0	$0.00	0									A	$0.00
13104	C/KELV C410B J WHWH V802	E	EA	CAXP	G	202	$0.00	0	$0.00	0									A	$0.00
13105	C/FRIG P120 J WHWH V802	E	EA	CAXP	G	54	$0.00	0	$0.00	0									C	$0.00
.3106	C/FRIG C170T J WHWH V802	E	EA	CAXP	G	241	$0.00	0	$0.00	0									C	$0.00
.3107	C/FRIG C250T J WHWH V802	E	EA	CAXP	G	65	$0.00	0	$0.00	0									C	$0.00
.3108	C/FRIG C335T J WHWH V802	E	EA	CAXP	G	116	$0.00	0	$0.00	0									A	$0.00
.3109	C/FRIG C390T J WHWH V802	E	EA	CAXP	G	61	$0.00	0	$0.00	0									A	$0.00
.3113	C/FRIG N400H J WHWH V802	E	EA	CAXP	G	3	$0.00	0	$0.00	0									A	$0.00

APPENDIX No. 10 SOURCE CODE G - 5

F = FREEZER, A = AWARD SERIES, C = COMPACT SERIES

PART NUMBER	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	ENG 1 COSTS	ENG 1 TRX	ENG 2 COST	ENG 2 TRX	ENG 3 COSTS	ENG 3 TRX F	ENG 4 COST	ENG 4 TRX C	ENG 5 COST	ENG 5 TRX A	ENG 6 COST	ENG 6 TRX F	C D	TOTAL COSTS
13114	C/KELV N375T J WHWH V802	E	EA	CAXP	G	621	$0.00	0	$0.00	0									A	$0.00
13115	C/KELV N395B J WHWH V802	E	EA	CAXP	G	372	$0.00	0	$0.00	0									A	$0.00
13116	C/KELV N405T J WHWH V802	E	EA	CAXP	G	189	$0.00	0	$0.00	0									A	$0.00
13117	C/KELV N400H J WHWH V802	E	EA	CAXP	G	10	$0.00	0	$0.00	0									A	$0.00
13118	C/KELV N375T J ALAL V802	E	EA	CAXP	G	492	$0.00	0	$0.00	0									A	$0.00
13119	C/KELV N395B J ALAL V802	E	EA	CAXP	G	325	$0.00	0	$0.00	0									A	$0.00
13121	C/KELV N400H J ALAL V802	E	EA	CAXP	G	869	$0.00	0	$0.00	0									A	$0.00
13122	C/KELV F160 J WHWH V802	E	EA	CAXP	G	214	$0.00	0	$0.00	0									C	$0.00
13123	C/KELV F230 J WHWH V802	E	EA	CAXP	G	81	$0.00	0	$0.00	0									C	$0.00
13124	C/KELV F310 J WHWH V802	E	EA	CAXP	G	500	$0.00	0	$0.00	0									A	$0.00
13125	C/FRIG F160 J WHWH V802	E	EA	CAXP	G	100	$0.00	0	$0.00	0									C	$0.00
13126	C/FRIG F230 J WHWH V802	E	EA	CAXP	G	21	$0.00	0	$0.00	0									C	$0.00
13127	C/FRIG F310 J WHWH V802	E	EA	CAXP	G	47	$0.00	0	$0.00	0									A	$0.00
13128	C/KELV C335T J WHWH V802	E	EA	CAXP	G	1560	$0.00	0	$0.00	0									A	$0.00
13129	C/KELV C390T J WHWH V802	E	EA	CAXP	G	495	$0.00	0	$0.00	0									A	$0.00
13130	C/LEON C335T J WHWH V802	E	EA	CAXP	G	20	$0.00	0	$0.00	0									A	$0.00
13135	C/LEON C335T J ALAL V802	E	EA	CAXP	G	264	$0.00	0	$0.00	0									A	$0.00
13140	C/KELV C370 J WHWH V802	E	EA	CAXP	G	9	$0.00	0	$0.00	0									A	$0.00
13142	C/LEON F310 J WHWH V802	E	EA	CAXP	G	3	$0.00	0	$0.00	0									A	$0.00
13143	C/FRIG P190 J WHWH V802	E	EA	CAXP	G	9	$0.00	0	$0.00	0									C	$0.00
						134608	$154,884.37	35353	$217,885.82	55113	$0.00	0	$0.00	0	$0.00	0	$0.00	0		$372,770.19
Appendix No. 11 Source Code G - 6						66828	$455.63	104	$23,163.18	5859										$ 23,618.81
Appendix No. 12 Source Code G - 7											$75,061.80	13324	$15,268.50	3454	$30,858.95	9344	$41,411.24	18020		$162,600.49
Appendix No. 13 Source Code G - 8											$15,233.20	2704	$62,055.50	14038	$116,570.05	35297	$20,282.76	8826		$214,141.51
						201436	$155,340.00	35457	$241,049.00	60972	$90,295.00	16028	$77,324.00	17492	$147,429.00	44641	$61,694.00	26846		$773,131.00

F = FREEZER, A = AWARD SERIES, C = COMPACT SERIES

PART NUMB.	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	ENG 1 COSTS	ENG 1 TRX C	ENG 2 COST	ENG 2 TRX A	ENG 3 COSTS	ENG 3 TRX F	ENG 4 COST	ENG 4 TRX C	ENG 5 COSTS	ENG 5 TRX A	ENG 6 COST	ENG 6 TRX F	CD	TOTAL COSTS
13144	C/FRIG C420T J WHWH V802	E	EA	CAXP	G	10	$0.00	0	$0.00	0									A	$0.00
13145	C/KELV F310 J WHWH V810	E	EA	CAXP	G	35	$0.00	0	$0.00	0									A	$0.00
13146	C/KELV C250T J WHWH V802	E	EA	CAXP	G	1410	$0.00	0	$0.00	0									C	$0.00
13147	C/LEON C170T J WHWH V802	E	EA	CAXP	G	18	$0.00	0	$0.00	0									C	$0.00
13148	C/LEON C390T J WHWH V802	E	EA	CAXP	G	6	$0.00	0	$0.00	0									A	$0.00
13149	C/LEON C410B J WHWH V802	E	EA	CAXP	G	8	$0.00	0	$0.00	0									A	$0.00
13150	C/SHACK P190 J WHWH V802	E	EA	CAXP	G	41	$0.00	0	$0.00	0									C	$0.00
13151	C/KELV P120 J WHWH V803	E	EA	CAXP	G	40	$0.00	0	$0.00	0									C	$0.00
13152	C/LEON C250T J WHWH V802	E	EA	CAXP	G	8	$0.00	0	$0.00	0									C	$0.00
13153	C/KELV F160 J WHWH V803	E	EA	CAXP	G	19	$0.00	0	$0.00	0									C	$0.00
13154	C/KELV N405T J WHWH V803	E	EA	CAXP	G	377	$0.00	0	$0.00	0									A	$0.00
13155	C/KELV N395B J WHWH V803	E	EA	CAXP	G	98	$0.00	0	$0.00	0									A	$0.00
13157	C/KELV C335T J WHWH V803	E	EA	CAXP	G	112	$0.00	0	$0.00	0									A	$0.00
13158	C/SHACK P120 H WWWW V802	E	EA	CAXP	G	84	$0.00	0	$0.00	0									C	$0.00
13159	C/SHACK C170T H WWWW V802	E	EA	CAXP	G	124	$0.00	0	$0.00	0									C	$0.00
13160	C/SHACK C250T H WWWW V802	E	EA	CAXP	G	108	$0.00	0	$0.00	0									C	$0.00
13161	C/SHACK C270 H WWWW V802	E	EA	CAXP	G	29	$0.00	0	$0.00	0									C	$0.00
13162	C/SHACK C335T H WWWW V802	E	EA	CAXP	G	148	$0.00	0	$0.00	0									A	$0.00
13163	C/SHACK C370 H WWWW V802	E	EA	CAXP	G	73	$0.00	0	$0.00	0									A	$0.00
13164	C/SHACK C380B H WWWW V802	E	EA	CAXP	G	114	$0.00	0	$0.00	0									A	$0.00
13165	C/SHACK C390T H WWWW V802	E	EA	CAXP	G	149	$0.00	0	$0.00	0									A	$0.00
13166	C/SHACK C410B H WWWW V802	E	EA	CAXP	G	81	$0.00	0	$0.00	0									A	$0.00
13167	C/SHACK F230 H WWWW V802	E	EA	CAXP	G	29	$0.00	0	$0.00	0									C	$0.00
13168	C/SHACK F310 H WWWW V802	E	EA	CAXP	G	140	$0.00	0	$0.00	0									A	$0.00
13169	C/SHACK N375T H WWWW V802	E	EA	CAXP	G	497	$0.00	0	$0.00	0									A	$0.00
13170	C/SHACK N395B H WWWW V802	E	EA	CAXP	G	13	$0.00	0	$0.00	0									A	$0.00
13173	C/FRIG N395B J ALAL V802	E	EA	CAXP	G	8	$0.00	0	$0.00	0									A	$0.00
13176	C/SHACK C250T J FAFA V802	E	EA	CAXP	G	542	$0.00	0	$0.00	0									C	$0.00
13177	C/SHACK C170T J FAFA V802	E	EA	CAXP	G	262	$0.00	0	$0.00	0									C	$0.00
13179	C/FRIG C380B J WHWH V802	E	EA	CAXP	G	54	$0.00	0	$0.00	0									A	$0.00
13180	C/FRIG C410B J WHWH V802	E	EA	CAXP	G	36	$0.00	0	$0.00	0									A	$0.00
13181	C/KELV C365H J WHWH V802	E	EA	CAXP	G	37	$0.00	0	$0.00	0									A	$0.00
13182	C/KELV C170T J WHWH V803	E	EA	CAXP	G	51	$0.00	0	$0.00	0									C	$0.00
13183	C/KELV C250T J WHWH V803	E	EA	CAXP	G	48	$0.00	0	$0.00	0									C	$0.00
13184	C/SHACK C190 H WWWW V802	E	EA	CAXP	G	47	$0.00	0	$0.00	0									C	$0.00
13186	C/KELV C380B J WHWH V803	E	EA	CAXP	G	82	$0.00	0	$0.00	0									A	$0.00
13187	C/KELV N375T J WHWH V803	E	EA	CAXP	G	492	$0.00	0	$0.00	0									A	$0.00
13188	C/KELV C410B J WHWH V803	E	EA	CAXP	G	54	$0.00	0	$0.00	0									A	$0.00
13189	C/KELV N400H J WHWH V803	E	EA	CAXP	G	435	$0.00	0	$0.00	0									A	$0.00
13190	C/KELV F310 J WHWH V803	E	EA	CAXP	G	3	$0.00	0	$0.00	0									F	$0.00
13191	C/KELV C420T J WHWH V802	E	EA	CAXP	G	122	$0.00	0	$0.00	0									A	$0.00
13195	C/LEON C370 J WHWH V802	E	EA	CAXP	G	3	$0.00	0	$0.00	0									A	$0.00
13198	C/KELV C190 J WHWH V802	E	EA	CAXP	G	181	$0.00	0	$0.00	0									C	$0.00
13199	C/KELV C270 J WHWH V802	E	EA	CAXP	G	123	$0.00	0	$0.00	0									C	$0.00
13200	C/SHACK C420T H WWWW V802	E	EA	CAXP	G	30	$0.00	0	$0.00	0									A	$0.00
13201	C/SHACK N400H H WWWW V802	E	EA	CAXP	G	875	$0.00	0	$0.00	0									A	$0.00
13202	C/SHACK N395B J ALAL V802	E	EA	CAXP	G	5	$0.00	0	$0.00	0									A	$0.00
13203	C/SHACK N405T J ALAL V802	E	EA	CAXP	G	377	$0.00	0	$0.00	0									A	$0.00
13205	C/F&P N369B H WWWW	L	EA	CAFR	G	641	$0.00	0	$2,534.15	641									A	$2,534.15
13209	C/KELV C120 J WHWH V803	E	EA	CAXP	G	79	$0.00	0	$0.00	0									C	$0.00
13212	C/LEON C365H J WHWH V802	E	EA	CAXP	G	5	$0.00	0	$0.00	0									A	$0.00
13215	C/KELV N375T J SASA V802	E	EA	CAXP	G	369	$0.00	0	$0.00	0									A	$0.00
13216	C/KELV N395B J SASA V802	E	EA	CAXP	G	263	$0.00	0	$0.00	0									A	$0.00

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PART NUMB.	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	ENG 1 COSTS	ENG 1 TRX C	ENG 2 COST	ENG 2 TRX A	ENG 3 COSTS	ENG 3 TRX F	ENG 4 COST	ENG 4 TRX C	ENG 5 COSTS	ENG 5 TRX A	ENG 6 COST	ENG 6 TRX F	CD	TOTAL COSTS
13217	C/KELV N405T J SASA V802	E	EA	CAXP	G	315	$0.00	0	$0.00	0									A	$0.00
13218	C/KELV N400H J SASA V802	E	EA	CAXP	G	725	$0.00	0	$0.00	0									A	$0.00
13220	C/FRIG N395B J SASA V802	E	EA	CAXP	G	12	$0.00	0	$0.00	0									A	$0.00
13223	C/LEON C380B J WHWH V802	E	EA	CAXP	G	6	$0.00	0	$0.00	0									A	$0.00
13226	C/SHACK F230 H WWWW V803	E	EA	CAXP	G	16	$0.00	0	$0.00	0									C	$0.00
13227	C/FRIG C190 J WHWH V802	E	EA	CAXP	G	17	$0.00	0	$0.00	0									C	$0.00
13228	C/KELV N375T J WHWH V814	E	EA	CAXP	G	39	$0.00	0	$0.00	0									A	$0.00
13229	C/KELV N405T J WHWH V814	E	EA	CAXP	G	3	$0.00	0	$0.00	0									A	$0.00
13230	C/KELV N400H J WHWH V814	E	EA	CAXP	G	46	$0.00	0	$0.00	0									A	$0.00
13231	C/KELV N375T J ALAL V814	E	EA	CAXP	G	35	$0.00	0	$0.00	0									A	$0.00
13232	C/KELV N405T J ALAL V814	E	EA	CAXP	G	2	$0.00	0	$0.00	0									A	$0.00
13233	C/KELV N400H J ALAL V814	E	EA	CAXP	G	45	$0.00	0	$0.00	0									A	$0.00
13234	C/KELV N375T J SASA V814	E	EA	CAXP	G	15	$0.00	0	$0.00	0									A	$0.00
13235	C/KELV N405T J SASA V814	E	EA	CAXP	G	2	$0.00	0	$0.00	0									A	$0.00
13236	C/KELV N400H J SASA V814	E	EA	CAXP	G	17	$0.00	0	$0.00	0									A	$0.00
13242	C/FRIG N400H J ALAL V814	E	EA	CAXP	G	12	$0.00	0	$0.00	0									A	$0.00
13245	C/FRIG N400H J SASA V814	E	EA	CAXP	G	18	$0.00	0	$0.00	0									A	$0.00
13248	C/LEON N375T J ALAL V814	E	EA	CAXP	G	50	$0.00	0	$0.00	0									A	$0.00
13252	C/LEON C250T J FAFA V802	E	EA	CAXP	G	30	$0.00	0	$0.00	0									C	$0.00
13253	C/LEON C335T J SASA V802	E	EA	CAXP	G	152	$0.00	0	$0.00	0									A	$0.00
13254	C/LEON N400H J SASA V814	E	EA	CAXP	G	45	$0.00	0	$0.00	0									A	$0.00
13255	C/LEON N375T J SASA V814	E	EA	CAXP	G	45	$0.00	0	$0.00	0									A	$0.00
13257	C/KELV F310 J ALAL V802	E	EA	CAXP	G	5	$0.00	0	$0.00	0									F	$0.00
13258	C/SHACK N395B J SASA V802	E	EA	CAXP	G	5	$0.00	0	$0.00	0									A	$0.00
13259	C/SHACK N375T H WWWW V814	E	EA	CAXP	G	5	$0.00	0	$0.00	0									A	$0.00
13260	C/SHACK N405T H WWWW V814	E	EA	CAXP	G	8	$0.00	0	$0.00	0									A	$0.00
13261	C/SHACK N400H H WWWW V814	E	EA	CAXP	G	8	$0.00	0	$0.00	0									A	$0.00
13262	C/SHACK N375T J ALAL V814	E	EA	CAXP	G	2	$0.00	0	$0.00	0									A	$0.00
13263	C/SHACK N405T J ALAL V814	E	EA	CAXP	G	6	$0.00	0	$0.00	0									A	$0.00
13264	C/SHACK N400H J ALAL V814	E	EA	CAXP	G	6	$0.00	0	$0.00	0									A	$0.00
13265	C/SHACK N375T J SASA V814	E	EA	CAXP	G	3	$0.00	0	$0.00	0									A	$0.00
13266	C/SHACK N405T J SASA V814	E	EA	CAXP	G	6	$0.00	0	$0.00	0									A	$0.00
13267	C/SHACK N400H J SASA V814	E	EA	CAXP	G	6	$0.00	0	$0.00	0									A	$0.00
15352	C/F&P N375T H WWWW	L	EA	CAFP	G	225	$0.00	0	$889.52	225									A	$889.52
15354	C/F&P N400H H WWWW	L	EA	CAFP	G	218	$0.00	0	$861.85	218									A	$861.85
15355	C/F&P N395B H WWWW	L	EA	CAFP	G	666	$0.00	0	$2,632.99	666									A	$2,632.99
15811	C/F&P C365H H WWWW V812	E	EA	CAAU	G	310	$0.00	0	$0.00	0									A	$0.00
15813	C/SHACK C365H J WHWH	L	EA	CASH	G	427	$0.00	0	$1,688.12	427									A	$1,688.12
15814	C/F&P H160E J WHWH V812	E	EA	CAAU	G	1637	$0.00	0	$0.00	0									F	$0.00
15815	C/F&P H220E J WHWH V812	E	EA	CAAU	G	1089	$0.00	0	$0.00	0									F	$0.00
15816	C/F&P H360E J WHWH V812	E	EA	CAAU	G	952	$0.00	0	$0.00	0									F	$0.00
15817	C/F&P H510E J WHWH V812	E	EA	CAAU	G	485	$0.00	0	$0.00	0									F	$0.00
15818	C/F&P H701E J WHWH V812	E	EA	CAAU	G	457	$0.00	0	$0.00	0									F	$0.00
15823	C/F&P H160S J WHWH V812	E	EA	CAAU	G	2126	$0.00	0	$0.00	0									F	$0.00
15824	C/F&P H220S J WHWH V812	E	EA	CAAU	G	1124	$0.00	0	$0.00	0									F	$0.00
15825	C/F&P H360S J WHWH V812	E	EA	CAAU	G	948	$0.00	0	$0.00	0									F	$0.00
15826	C/FRIG F310 J SASA	L	EA	CAFR	G	129	$0.00	0	$509.99	129									A	$509.99
15827	C/FRIG C370 J SASA	L	EA	CAFR	G	167	$0.00	0	$660.22	167									A	$660.22
15828	C/FRIG C365H J SASA	L	EA	CAFR	G	42	$0.00	0	$166.04	42									A	$166.04
15829	C/FRIG C335T J SASA	L	EA	CAFR	G	20	$0.00	0	$79.07	20									A	$79.07
15830	C/FRIG C390T J SASA	L	EA	CAFR	G	6	$0.00	0	$23.72	6									A	$23.72
15831	C/FRIG C380B J SASA	L	EA	CAFR	G	325	$0.00	0	$1,284.87	325									A	$1,284.87
15834	C/FRIG C410B J SASA	L	EA	CAFR	G	11	$0.00	0	$43.49	11									A	$43.49

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PART NUMB.	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	ENG 1 COSTS	ENG 1 TRX C	ENG 2 COST	ENG 2 TRX A	ENG 3 COSTS	ENG 3 TRX F	ENG 4 COST	ENG 4 TRX C	ENG 5 COSTS	ENG 5 TRX A	ENG 6 COST	ENG 6 TRX F	CD	TOTAL COSTS
15836	C/KELV C365H J SASA	L	EA	CAKE	G	68	$0.00	0	$268.83	68									A	$268.83
15837	C/KELV C390T J SASA	L	EA	CAKE	G	8	$0.00	0	$31.63	8									A	$31.63
15840	C/KELV C410B J SASA	L	EA	CAKE	G	17	$0.00	0	$67.21	17									A	$67.21
15842	C/F&P F310 J WHWH V812	E	EA	CAAU	G	2376	$0.00	0	$0.00	0									A	$0.00
15843	C/F&P C370 J WHWH V812	E	EA	CAAU	G	2807	$0.00	0	$0.00	0									A	$0.00
15844	C/F&P C365H J WHWH V812	E	EA	CAAU	G	547	$0.00	0	$0.00	0									A	$0.00
15845	C/F&P C335T J WHWH V812	E	EA	CAAU	G	1827	$0.00	0	$0.00	0									A	$0.00
15847	C/F&P C390T J WHWH V812	E	EA	CAAU	G	2501	$0.00	0	$0.00	0									A	$0.00
15848	C/F&P N375T J WHWH V812	E	EA	CAAU	G	1894	$0.00	0	$0.00	0									A	$0.00
15849	C/F&P C380B J WHWH V812	E	EA	CAAU	G	1838	$0.00	0	$0.00	0									A	$0.00
15850	C/F&P C420T J WHWH V812	E	EA	CAAU	G	2011	$0.00	0	$0.00	0									A	$0.00
15852	C/F&P N405T J WHWH V812	E	EA	CAAU	G	1410	$0.00	0	$0.00	0									A	$0.00
15853	C/F&P C415H J WHWH V812	E	EA	CAAU	G	792	$0.00	0	$0.00	0									A	$0.00
15854	C/F&P N400H J WHWH V812	E	EA	CAAU	G	727	$0.00	0	$0.00	0									A	$0.00
15855	C/F&P C410B J WHWH V812	E	EA	CAAU	G	3548	$0.00	0	$0.00	0									A	$0.00
15856	C/F&P N395B J WHWH V812	E	EA	CAAU	G	4513	$0.00	0	$0.00	0									A	$0.00
15857	C/F&P P190 J WHWH V812	E	EA	CAAU	G	112	$0.00	0	$0.00	0									C	$0.00
15858	C/F&P C190 J WHWH V812	E	EA	CAAU	G	667	$0.00	0	$0.00	0									C	$0.00
15859	C/F&P F160 J WHWH V812	E	EA	CAAU	G	832	$0.00	0	$0.00	0									C	$0.00
15860	C/F&P C170T J WHWH V812	E	EA	CAAU	G	1090	$0.00	0	$0.00	0									C	$0.00
15861	C/F&P C270 J WHWH V812	E	EA	CAAU	G	1997	$0.00	0	$0.00	0									C	$0.00
15862	C/F&P F230 J WHWH V812	E	EA	CAAU	G	1752	$0.00	0	$0.00	0									C	$0.00
15863	C/F&P C250T J WHWH V812	E	EA	CAAU	G	1977	$0.00	0	$0.00	0									C	$0.00
15864	C/F&P C240B J WHWH V812	E	EA	CAAU	G	2137	$0.00	0	$0.00	0									C	$0.00
15865	C/FRIG C389T J WHWH	L	EA	CAFR	G	68	$0.00	0	$268.83	68									A	$268.83
15866	C/KELV C389T J WHWH	L	EA	CAKE	G	109	$0.00	0	$430.92	109									A	$430.92
15867	C/SHACK C370 J WH	L	EA	CASH	G	40	$0.00	0	$158.14	40									A	$158.14
15869	C/SHACK F310 J WH	L	EA	CASH	G	20	$0.00	0	$79.07	20									A	$79.07
15870	C/SHACK H360 J WH	L	EA	CASH	G	35	$0.00	0	$0.00	0									F	$0.00
15871	C/SHACK H510 J WH	L	EA	CASH	G	5	$0.00	0	$0.00	0									F	$0.00
15872	C/F&P N369B H WWWW V812	E	EA	CAAU	G	1449	$0.00	0	$0.00	0									A	$0.00
15873	C/SHACK C120 J WH	L	EA	CASH	G	104	$455.63	104	$0.00	0									C	$455.63
15874	C/F&P P120 J WHWH V812	E	EA	CAAU	G	168	$0.00	0	$0.00	0									C	$0.00
15875	C/KELV N369B J SASA	L	EA	CAKE	G	180	$0.00	0	$711.62	180									A	$711.62
15876	C/FRIG N369B J SASA	L	EA	CAFR	G	120	$0.00	0	$474.41	120									A	$474.41
NH360	M/SANDEN H360	L	EA	C800	G	1264	$0.00	0	$0.00	0									F	$0.00
UNALL	UNALLOCATED HF M/S PARTS NO'	L	EA	CAHF	G	1400	$0.00	0	$0.00	0									F	$0.00
UNALL	UNALLOCATED RF M/S PARTS NO'	L	EA	CARF	G	2352	$0.00	0	$9,298.49	2352									A	$9,298.49
						66828	$455.63	104	$23,163.18	5859	$0.00	0	$0.00	0	$0.00	0	$0.00	0		$23,618.81

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PART NUMB.	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	ENG 3 COSTS	ENG 3 TRX F	ENG 4 COST	ENG 4 TRX C	ENG 5 COST	ENG 5 TRX A	ENG 6 COST	ENG 6 TRX F	CD	TOTAL COSTS
12500	C/KELV H160SL J WHWH V802	E	EA	CAXP	G	42					$0.00	0	$96.52	42	F	$96.52
12501	C/KELV H220SL J WHWH V802	E	EA	CAXP	G	15					$0.00	0	$34.47	15	F	$34.47
12502	C/KELV H360SL J WHWH V802	E	EA	CAXP	G	15					$0.00	0	$34.47	15	F	$34.47
12503	C/KELV H510SL J WHWH V802	E	EA	CAXP	G	8					$0.00	0	$18.38	8	F	$18.38
12504	C/KELV H701SL J WHWH V802	E	EA	CAXP	G	9					$0.00	0	$20.68	9	F	$20.68
12505	C/KELV H220EL J WHWH V802	E	EA	CAXP	G	174					$0.00	0	$399.86	174	F	$399.86
12506	C/KELV H360EL J WHWH V802	E	EA	CAXP	G	200					$0.00	0	$459.61	200	F	$459.61
12508	C/KELV H510EL J WHWH V802	E	EA	CAXP	G	130					$0.00	0	$298.75	130	F	$298.75
12509	C/KELV H701EL J WHWH V802	E	EA	CAXP	G	5					$0.00	0	$11.49	5	F	$11.49
12512	C/KELV H360EL J WHWH V810	E	EA	CAXP	G	287					$0.00	0	$659.55	287	F	$659.55
12515	C/SHARP H160EL J WHWH V810	E	EA	CAXP	G	576					$0.00	0	$1,323.69	576	F	$1,323.69
12516	C/SHARP H220EL J WHWH V810	E	EA	CAXP	G	4265					$0.00	0	$9,801.27	4265	F	$9,801.27
12518	C/SHACK H220SL J WHWH V810	E	EA	CAXP	G	3494					$0.00	0	$8,029.46	3494	F	$8,029.46
12519	C/SHACK H360SL J WHWH V810	E	EA	CAXP	G	1428					$0.00	0	$3,281.64	1428	F	$3,281.64
12520	C/SHACK H510SL J WHWH V810	E	EA	CAXP	G	1021					$0.00	0	$2,346.33	1021	F	$2,346.33
12521	C/SHACK H701SL J WHWH V810	E	EA	CAXP	G	1175					$0.00	0	$2,700.23	1175	F	$2,700.23
12522	C/SHACK H701SL J WHWH V802	E	EA	CAXP	G	881					$0.00	0	$2,024.60	881	F	$2,024.60
12524	C/SHACK H220SL J WHWH V802	E	EA	CAXP	G	697					$0.00	0	$1,601.76	697	F	$1,601.76
12525	C/SHACK H360SL J WHWH V802	E	EA	CAXP	G	766					$0.00	0	$1,760.32	766	F	$1,760.32
12526	C/SHACK H510SL J WHWH V802	E	EA	CAXP	G	489					$0.00	0	$1,123.76	489	F	$1,123.76
12527	C/SHARP H360EL J WHWH V810	E	EA	CAXP	G	659					$0.00	0	$1,514.43	659	F	$1,514.43
12528	C/SHACK H160SL J WHWH V803	E	EA	CAXP	G	127					$0.00	0	$291.85	127	F	$291.85
12530	C/SHACK H360SL J WHWH V803	E	EA	CAXP	G	536					$0.00	0	$1,231.77	536	F	$1,231.77
12531	C/SHACK H701SL J WHWH V803	E	EA	CAXP	G	104					$0.00	0	$239.00	104	F	$239.00
12532	C/SHACK H510SL J WHWH V803	E	EA	CAXP	G	147					$0.00	0	$337.82	147	F	$337.82
12533	C/KELV H510SL J WHWH V803	E	EA	CAXP	G	3					$0.00	0	$6.89	3	F	$6.89
12534	C/KELV H360SL J WHWH V803	E	EA	CAXP	G	6					$0.00	0	$13.79	6	F	$13.79
12535	C/KELV H220SL J WHWH V803	E	EA	CAXP	G	272					$0.00	0	$625.08	272	F	$625.08
12536	C/KELV H160SL J WHWH V803	E	EA	CAXP	G	43					$0.00	0	$98.82	43	F	$98.82
12537	C/KELV H220EL J WHWH V803	E	EA	CAXP	G	23					$0.00	0	$52.86	23	F	$52.86
12538	C/KELV H360EL J WHWH V803	E	EA	CAXP	G	38					$0.00	0	$87.33	38	F	$87.33
12539	C/KELV H510EL J WHWH V803	E	EA	CAXP	G	16					$0.00	0	$36.77	16	F	$36.77
12540	C/FRIG H360EL J WHWH V813	E	EA	CAXP	G	96					$0.00	0	$220.61	96	F	$220.61
12541	C/FRIG H510EL J WHWH V813	E	EA	CAXP	G	41					$0.00	0	$94.22	41	F	$94.22
12542	C/FRIG H701EL J WHWH V813	E	EA	CAXP	G	52					$0.00	0	$119.50	52	F	$119.50
12545	C/KELV H701SL J WHWH V803	E	EA	CAXP	G	5					$0.00	0	$11.49	5	F	$11.49
12552	C/KELV H160EL J WHWH V802	E	EA	CAXP	G	2					$0.00	0	$4.60	2	F	$4.60
12854	C/FRIG F310 J WHWH	L	EA	CAFR	G	1228					$0.00	0	$0.00	0	A	$0.00
12855	C/FRIG C370 J WHWH	L	EA	CAFR	G	1656					$0.00	0	$0.00	0	A	$0.00
12856	C/FRIG C365H J WHWH	L	EA	CAFR	G	429					$0.00	0	$0.00	0	A	$0.00
12857	C/FRIG C335T J WHWH	L	EA	CAFR	G	1610					$0.00	0	$0.00	0	A	$0.00
12859	C/FRIG C390T J WHWH	L	EA	CAFR	G	636					$0.00	0	$0.00	0	A	$0.00
12860	C/FRIG N375T J SASA	L	EA	CAFR	G	8					$0.00	0	$0.00	0	A	$0.00
12861	C/FRIG C380B J WHWH	L	EA	CAFR	G	3062					$0.00	0	$0.00	0	A	$0.00
12865	C/FRIG N400H J SASA	L	EA	CAFR	G	8					$0.00	0	$0.00	0	A	$0.00
12866	C/FRIG C410B J WHWH	L	EA	CAFR	G	913					$0.00	0	$0.00	0	A	$0.00
12867	C/FRIG N395B J SASA	L	EA	CAFR	G	203					$0.00	0	$0.00	0	A	$0.00
12868	C/KELV F310 J SASA	L	EA	CAKE	G	201					$0.00	0	$0.00	0	A	$0.00
12869	C/KELV C370 J SASA	L	EA	CAKE	G	275					$0.00	0	$0.00	0	A	$0.00
12870	C/KELV C365H J WHWH	L	EA	CAKE	G	690					$0.00	0	$0.00	0	A	$0.00
12871	C/KELV C335T J SASA	L	EA	CAKE	G	30					$0.00	0	$0.00	0	A	$0.00
12873	C/KELV C390T J WHWH	L	EA	CAKE	G	1030					$0.00	0	$0.00	0	A	$0.00
12874	C/KELV N375T J SASA	L	EA	CAKE	G	12					$0.00	0	$0.00	0	A	$0.00

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PART NUMB.	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	ENG 3 COSTS	ENG 3 TRX F	ENG 4 COST	ENG 4 TRX C	ENG 5 COST	ENG 5 TRX A	ENG 6 COST	ENG 6 TRX F	CD	TOTAL COSTS
12875	C/KELV C380B J SASA	L	EA	CAKE	G	532					$0.00	0	$0.00	0	A	$0.00
12879	C/KELV N400H J SASA	L	EA	CAKE	G	14					$0.00	0	$0.00	0	A	$0.00
12880	C/KELV C410B J WHWH	L	EA	CAKE	G	1482					$0.00	0	$0.00	0	A	$0.00
12881	C/KELV N395B J SASA	L	EA	CAKE	G	377					$0.00	0	$0.00	0	A	$0.00
12882	C/SHACK F310 J WHWH	L	EA	CASH	G	1216					$0.00	0	$0.00	0	A	$0.00
12883	C/SHACK C370 J WHWH	L	EA	CASH	G	1898					$0.00	0	$0.00	0	A	$0.00
12884	C/FRIG N375T J WHWH	L	EA	CAFR	G	686					$0.00	0	$0.00	0	A	$0.00
12885	C/SHACK C335T J WHWH	L	EA	CASH	G	1324					$0.00	0	$0.00	0	A	$0.00
12887	C/SHACK C390T J WHWH	L	EA	CASH	G	417					$0.00	0	$0.00	0	A	$0.00
12888	C/SHACK N375T J WHWH	L	EA	CASH	G	372					$0.00	0	$0.00	0	A	$0.00
12889	C/SHACK C380B J WHWH	L	EA	CASH	G	2313					$0.00	0	$0.00	0	A	$0.00
12892	C/SHACK N405T J WHWH	L	EA	CASH	G	470					$0.00	0	$0.00	0	A	$0.00
12894	C/FRIG N400H J WHWH	L	EA	CAFR	G	838					$0.00	0	$0.00	0	A	$0.00
12895	C/SHACK C410B J WHWH	L	EA	CASH	G	821					$0.00	0	$0.00	0	A	$0.00
12896	C/SHACK N395B J WHWH	L	EA	CASH	G	1085					$0.00	0	$0.00	0	A	$0.00
12905	C/F&P C415H H WWWW V812	E	EA	CAAU	G	489					$1,614.95	489	$0.00	0	A	$1,614.95
12906	C/F&P N395B H WWWW V812	E	EA	CAAU	G	1355					$4,474.95	1355	$0.00	0	A	$4,474.95
12913	C/F&P N375T H WWWW V812	E	EA	CAAU	G	421					$1,390.37	421	$0.00	0	A	$1,390.37
12914	C/F&P N405T H WWWW V812	E	EA	CAAU	G	413					$1,363.95	413	$0.00	0	A	$1,363.95
12915	C/F&P N400H H WWWW V812	E	EA	CAAU	G	209					$690.23	209	$0.00	0	A	$690.23
12953	C/FRIG N395B J WHWH	L	EA	CAFR	G	1817							$0.00	0	A	$0.00
12954	C/KELV F310 J WHWH	L	EA	CAKE	G	1931							$0.00	0	A	$0.00
12955	C/KELV C370 J WHWH	L	EA	CAKE	G	2705							$0.00	0	A	$0.00
12956	C/KELV C335T J WHWH	L	EA	CAKE	G	2607							$0.00	0	A	$0.00
12957	C/KELV N375T J WHWH	L	EA	CAKE	G	1115							$0.00	0	A	$0.00
12958	C/KELV C380B J WHWH	L	EA	CAKE	G	4986							$0.00	0	A	$0.00
12960	C/KELV N400H J WHWH	L	EA	CAKE	G	1375							$0.00	0	A	$0.00
12961	C/KELV N395B J WHWH	L	EA	CAKE	G	3440							$0.00	0	A	$0.00
12962	C/KELV P120 J WHWH	L	EA	CAKE	G	2156							$0.00	0	C	$0.00
12963	C/KELV C190 J WHWH	L	EA	CAKE	G	2205							$0.00	0	C	$0.00
12964	C/KELV F160 J WHWH	L	EA	CAKE	G	1397							$0.00	0	C	$0.00
12965	C/KELV C170T J WHWH	L	EA	CAKE	G	3835							$0.00	0	C	$0.00
12966	C/KELV C270 J WHWH	L	EA	CAKE	G	1339							$0.00	0	C	$0.00
12967	C/KELV C250T J WHWH	L	EA	CAKE	G	1316							$0.00	0	C	$0.00
12968	C/KELV C240B J WHWH	L	EA	CAKE	G	4076							$0.00	0	C	$0.00
12969	C/KELV F230 J WHWH	L	EA	CAKE	G	1427							$0.00	0	C	$0.00
12970	C/FRIG P120 J WHWH	L	EA	CAFR	G	1327							$0.00	0	C	$0.00
12971	C/FRIG C190 J WHWH	L	EA	CAFR	G	1369							$0.00	0	C	$0.00
12972	C/FRIG F160 J WHWH	L	EA	CAFR	G	927							$0.00	0	C	$0.00
12973	C/FRIG C170T J WHWH	L	EA	CAFR	G	2324							$0.00	0	C	$0.00
12975	C/FRIG C270 J WHWH	L	EA	CAFR	G	804							$0.00	0	C	$0.00
12976	C/FRIG C250T J WHWH	L	EA	CAFR	G	788							$0.00	0	C	$0.00
12977	C/FRIG C240B J WHWH	L	EA	CAFR	G	2512							$0.00	0	C	$0.00
12978	C/FRIG F230 J WHWH	L	EA	CAFR	G	973							$0.00	0	C	$0.00
12980	C/SHACK P120 J WHWH	L	EA	CASH	G	779							$0.00	0	C	$0.00
12981	C/SHACK C190 J WHWH	L	EA	CASH	G	1089							$0.00	0	C	$0.00
12982	C/SHACK F160 J WHWH	L	EA	CASH	G	581							$0.00	0	C	$0.00
12983	C/SHACK C170T J WHWH	L	EA	CASH	G	1439							$0.00	0	C	$0.00
12985	C/SHACK C270 J WHWH	L	EA	CASH	G	724							$0.00	0	C	$0.00
12987	C/SHACK C240B J WHWH	L	EA	CASH	G	1423							$0.00	0	C	$0.00
12988	C/SHACK F230 J WHWH	L	EA	CASH	G	543							$0.00	0	C	$0.00
12996	C/FRIG H160S J WHWH V802	E	EA	CAXP	G	3							$6.89	3	F	$6.89
12997	C/FRIG H220S J WHWH V802	E	EA	CAXP	G	13							$29.87	13	F	$29.87

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PART NUMB.	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	ENG 3 COSTS	ENG 3 TRX F	ENG 4 COST	ENG 4 TRX C	ENG 5 COST	ENG 5 TRX A	ENG 6 COST	ENG 6 TRX F	CD	TOTAL COSTS
12998	C/FRIG H360S J WHWH V802	E	EA	CAXP	G	5							$11.49	5	F	$11.49
13002	C/KELV H160S J WHWH V802	E	EA	CAXP	G	5							$11.49	5	F	$11.49
13003	C/KELV H220S J WHWH V802	E	EA	CAXP	G	5							$11.49	5	F	$11.49
13004	C/KELV H360S J WHWH V802	E	EA	CAXP	G	10							$22.98	10	F	$22.98
13005	C/KELV H510S J WHWH V802	E	EA	CAXP	G	16							$36.77	16	F	$36.77
13006	C/KELV H701S J WHWH V802	E	EA	CAXP	G	10							$22.98	10	F	$22.98
13007	C/SHACK H160S J WHWH V802	E	EA	CAXP	G	24							$55.15	24	F	$55.15
13008	C/SHACK H220S J WHWH V802	E	EA	CAXP	G	27							$62.05	27	F	$62.05
13009	C/SHACK H360S J WHWH V802	E	EA	CAXP	G	25							$57.45	25	F	$57.45
13011	C/SHACK H510S J WHWH V802	E	EA	CAXP	G	14							$32.17	14	F	$32.17
13012	C/SHACK H701S J WHWH V802	E	EA	CAXP	G	16							$36.79	16	F	$36.79
13013	C/KELV H160E J WHWH	L	EA	CAKE	G	1982	$11,165.75	1982							F	$11,165.75
13014	C/KELV H220E J WHWH	L	EA	CAKE	G	1892	$10,658.73	1892							F	$10,658.73
13016	C/KELV H360E J WHWH	L	EA	CAKE	G	2012	$11,334.76	2012							F	$11,334.76
13017	C/KELV H510E J WHWH	L	EA	CAKE	G	518	$2,918.19	518							F	$2,918.19
13018	C/KELV H701E J WHWH	L	EA	CAKE	G	273	$1,537.97	273							F	$1,537.97
13019	C/SHACK H160E J WHWH	L	EA	CASH	G	320	$1,802.75	320							F	$1,802.75
13020	C/SHACK H220E J WHWH	L	EA	CASH	G	580	$3,267.48	580							F	$3,267.48
13021	C/SHACK H360E J WHWH	L	EA	CASH	G	710	$3,999.84	710							F	$3,999.84
13022	C/SHACK H510E J WHWH	L	EA	CASH	G	301	$1,695.71	301							F	$1,695.71
13023	C/SHACK H701E J WHWH	L	EA	CASH	G	195	$1,098.55	195							F	$1,098.55
13024	C/FRIG H160E J WHWH	L	EA	CAFR	G	1343	$7,565.90	1343							F	$7,565.90
13025	C/FRIG H220E J WHWH	L	EA	CAFR	G	1272	$7,165.91	1272							F	$7,165.91
13026	C/FRIG H360E J WHWH	L	EA	CAFR	G	1390	$7,830.67	1390							F	$7,830.67
13027	C/FRIG H510E J WHWH	L	EA	CAFR	G	351	$1,977.39	351							F	$1,977.39
13028	C/FRIG H701E J WHWH	L	EA	CAFR	G	185	$1,042.20	185							F	$1,042.20
13039	C/F&P F310 H WWWW	L	EA	CAFP	G	358									A	$0.00
13040	C/F&P C370 H WWWW	L	EA	CAFP	G	371									A	$0.00
13041	C/F&P C365H H WWWW	L	EA	CAFP	G	180									A	$0.00
13042	C/F&P C335T H WWWW	L	EA	CAAU	G	322									A	$0.00
13043	C/F&P C390T H WWWW	L	EA	CAFP	G	166									A	$0.00
13044	C/F&P C380B H WWWW	L	EA	CAFP	G	1057									A	$0.00
13047	C/F&P C410B H WWWW	L	EA	CAFP	G	226									A	$0.00
13056	C/FRIG C240B H WWWW V813	E	EA	CAXP	G	144			$636.56	144					C	$636.56
13065	C/KELV C229 J WHWH	L	EA	CAKE	G	1650			$0.00	0					A	$0.00
13067	C/KELV N369B J WHWH	L	EA	CAKE	G	1689			$0.00	0					A	$0.00
13068	C/FRIG C229 J WHWH	L	EA	CAFR	G	935			$0.00	0					A	$0.00
13070	C/FRIG N369B J WHWH	L	EA	CAFR	G	1123			$0.00	0					A	$0.00
13071	C/SHACK C229 J WHWH	L	EA	CASH	G	1224			$0.00	0					A	$0.00
13100	C/KELV P120 J WHWH V802	E	EA	CAXP	G	271			$1,197.97	271					C	$1,197.97
13101	C/KELV P190 J WHWH V802	E	EA	CAXP	G	134			$592.35	134					C	$592.35
13102	C/KELV C170T J WHWH V802	E	EA	CAXP	G	2120			$9,371.53	2120					C	$9,371.53
13103	C/KELV C380B J WHWH V802	E	EA	CAXP	G	299			$0.00	0	$987.46	299			A	$987.46
13104	C/KELV C410B J WHWH V802	E	EA	CAXP	G	202			$0.00	0	$667.11	202			A	$667.11
13105	C/FRIG P120 J WHWH V802	E	EA	CAXP	G	54			$238.71	54	$0.00	0			C	$238.71
13106	C/FRIG C170T J WHWH V802	E	EA	CAXP	G	241			$1,065.35	241	$0.00	0			C	$1,065.35
13107	C/FRIG C250T J WHWH V802	E	EA	CAXP	G	65			$287.33	65	$0.00	0			C	$287.33
13108	C/FRIG C335T J WHWH V802	E	EA	CAXP	G	116			$0.00	0	$383.10	116			A	$383.10
13109	C/FRIG C390T J WHWH V802	E	EA	CAXP	G	61			$0.00	0	$201.46	61			A	$201.46
13113	C/FRIG N400H J WHWH V802	E	EA	CAXP	G	3			$0.00	0	$9.91	3			A	$9.91
13114	C/KELV N375T J WHWH V802	E	EA	CAXP	G	621			$0.00	0	$2,050.88	621			A	$2,050.88
13115	C/KELV N395B J WHWH V802	E	EA	CAXP	G	372			$0.00	0	$1,228.55	372			A	$1,228.55
13116	C/KELV N405T J WHWH V802	E	EA	CAXP	G	189			$0.00	0	$624.18	189			A	$624.18

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PART NUMB.	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	ENG 3 COSTS	ENG 3 TRX F	ENG 4 COST	ENG 4 TRX C	ENG 5 COST	ENG 5 TRX A	ENG 6 COST	ENG 6 TRX F	CD	TOTAL COSTS
13117	C/KELV N400H J WHWH V802	E	EA	CAXP	G	10			$0.00	0	$33.03	10			A	$33.03
13118	C/KELV N375T J ALAL V802	E	EA	CAXP	G	492			$0.00	0	$1,624.85	492			A	$1,624.85
13119	C/KELV N395B J ALAL V802	E	EA	CAXP	G	325			$0.00	0	$1,073.33	325			A	$1,073.33
13121	C/KELV N400H J ALAL V802	E	EA	CAXP	G	869			$0.00	0	$2,869.91	869			A	$2,869.91
13122	C/KELV F160 J WHWH V802	E	EA	CAXP	G	214			$945.99	214	$0.00	0			C	$945.99
13123	C/KELV F230 J WHWH V802	E	EA	CAXP	G	81			$358.06	81	$0.00	0			C	$358.06
13124	C/KELV F310 J WHWH V802	E	EA	CAXP	G	500			$0.00	0	$1,651.27	500			A	$1,651.27
13125	C/FRIG F160 J WHWH V802	E	EA	CAXP	G	100			$442.05	100	$0.00	0			C	$442.05
13126	C/FRIG F230 J WHWH V802	E	EA	CAXP	G	21			$92.83	21	$0.00	0			C	$92.83
13127	C/FRIG F310 J WHWH V802	E	EA	CAXP	G	47			$0.00	0	$155.22	47			A	$155.22
13128	C/KELV C335T J WHWH V802	E	EA	CAXP	G	1560			$0.00	0	$5,151.97	1560			A	$5,151.97
13129	C/KELV C390T J WHWH V802	E	EA	CAXP	G	495			$0.00	0	$1,634.76	495			A	$1,634.76
13130	C/LEON C335T J WHWH V802	E	EA	CAXP	G	20			$0.00	0	$66.05	20			A	$66.05
13135	C/LEON C335T J ALAL V802	E	EA	CAXP	G	264			$0.00	0	$871.87	264			A	$871.87
13140	C/KELV C370 J WHWH V802	E	EA	CAXP	G	9			$0.00	0	$29.72	9			A	$29.72
13142	C/LEON F310 J WHWH V802	E	EA	CAXP	G	3			$0.00	0	$9.87	3			A	$9.87
13143	C/FRIG P190 J WHWH V802	E	EA	CAXP	G	9			$39.77	9	$0.00	0			C	$39.77
						134608	$75,061.80	13324	$15,268.50	3454	$30,858.95	9344	$41,411.24	18020		$162,600.49

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PART NUMB.	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	ENG 1 COSTS	ENG 1 TRX C	ENG 2 COST	ENG 2 TRX A	ENG 3 COSTS	ENG 3 TRX F	ENG 4 COST	ENG 4 TRX C	ENG 5 COSTS	ENG 5 TRX A	ENG 6 COST	ENG 6 TRX F	C	TOTAL COSTS
13144	C/FRIG C420T J WHWH V802	E	EA	CAXP	G	10					$0.00	0	$0.00	0	$33.03	10	$0.00	0	A	$33.03
13145	C/KELV F310 J WHWH V810	E	EA	CAXP	G	35					$0.00	0	$0.00	0	$115.59	35	$0.00	0	A	$115.59
13146	C/KELV C250T J WHWH V802	E	EA	CAXP	G	1410					$0.00	0	$6,232.95	1410	$0.00	0	$0.00	0	C	$6,232.95
13147	C/LEON C170T J WHWH V802	E	EA	CAXP	G	18					$0.00	0	$79.57	18	$0.00	0	$0.00	0	C	$79.57
13148	C/LEON C390T J WHWH V802	E	EA	CAXP	G	6					$0.00	0	$0.00	0	$19.82	6	$0.00	0	A	$19.82
13149	C/LEON C410B J WHWH V802	E	EA	CAXP	G	8					$0.00	0	$0.00	0	$26.42	8	$0.00	0	A	$26.42
13150	C/SHACK P190 J WHWH V802	E	EA	CAXP	G	41					$0.00	0	$181.24	41	$0.00	0	$0.00	0	C	$181.24
13151	C/KELV P120 J WHWH V803	E	EA	CAXP	G	40					$0.00	0	$176.82	40	$0.00	0	$0.00	0	C	$176.82
13152	C/LEON C250T J WHWH V802	E	EA	CAXP	G	8					$0.00	0	$35.36	8	$0.00	0	$0.00	0	C	$35.36
13153	C/KELV F160 J WHWH V803	E	EA	CAXP	G	19					$0.00	0	$83.99	19	$0.00	0	$0.00	0	C	$83.99
13154	C/KELV N405T J WHWH V803	E	EA	CAXP	G	377					$0.00	0	$0.00	0	$1,245.06	377	$0.00	0	A	$1,245.06
13155	C/KELV N395B J WHWH V803	E	EA	CAXP	G	98					$0.00	0	$0.00	0	$323.65	98	$0.00	0	A	$323.65
13157	C/KELV C335T J WHWH V803	E	EA	CAXP	G	112					$0.00	0	$0.00	0	$369.89	112	$0.00	0	A	$369.89
13158	C/SHACK P120 H WWWW V802	E	EA	CAXP	G	84					$0.00	0	$371.32	84	$0.00	0	$0.00	0	C	$371.32
13159	C/SHACK C170T H WWWW V802	E	EA	CAXP	G	124					$0.00	0	$548.15	124	$0.00	0	$0.00	0	C	$548.15
13160	C/SHACK C250T H WWWW V802	E	EA	CAXP	G	108					$0.00	0	$477.42	108	$0.00	0	$0.00	0	C	$477.42
13161	C/SHACK C270 H WWWW V802	E	EA	CAXP	G	29					$0.00	0	$128.20	29	$0.00	0	$0.00	0	C	$128.20
13162	C/SHACK C335T H WWWW V802	E	EA	CAXP	G	148					$0.00	0	$0.00	0	$488.78	148	$0.00	0	A	$488.78
13163	C/SHACK C370 H WWWW V802	E	EA	CAXP	G	73					$0.00	0	$0.00	0	$241.09	73	$0.00	0	A	$241.09
13164	C/SHACK C380B H WWWW V802	E	EA	CAXP	G	114					$0.00	0	$0.00	0	$376.49	114	$0.00	0	A	$376.49
13165	C/SHACK C390T H WWWW V802	E	EA	CAXP	G	149					$0.00	0	$0.00	0	$492.08	149	$0.00	0	A	$492.08
13166	C/SHACK C410B H WWWW V802	E	EA	CAXP	G	81					$0.00	0	$0.00	0	$267.51	81	$0.00	0	A	$267.51
13167	C/SHACK F230 H WWWW V802	E	EA	CAXP	G	29					$0.00	0	$128.20	29	$0.00	0	$0.00	0	C	$128.20
13168	C/SHACK F310 H WWWW V802	E	EA	CAXP	G	140					$0.00	0	$0.00	0	$462.36	140	$0.00	0	A	$462.36
13169	C/SHACK N375T H WWWW V802	E	EA	CAXP	G	497					$0.00	0	$0.00	0	$1,641.37	497	$0.00	0	A	$1,641.37
13170	C/SHACK N395B H WWWW V802	E	EA	CAXP	G	13					$0.00	0	$0.00	0	$42.93	13	$0.00	0	A	$42.93
13173	C/FRIG N395B J ALAL V802	E	EA	CAXP	G	8					$0.00	0	$0.00	0	$26.42	8	$0.00	0	A	$26.42
13176	C/SHACK C250T J FAFA V802	E	EA	CAXP	G	542					$0.00	0	$2,395.93	542	$0.00	0	$0.00	0	C	$2,395.93
13177	C/SHACK C170T J FAFA V802	E	EA	CAXP	G	262					$0.00	0	$1,158.18	262	$0.00	0	$0.00	0	C	$1,158.18
13179	C/FRIG C380B J WHWH V802	E	EA	CAXP	G	54					$0.00	0	$0.00	0	$178.34	54	$0.00	0	A	$178.34
13180	C/FRIG C410B J WHWH V802	E	EA	CAXP	G	36					$0.00	0	$0.00	0	$118.89	36	$0.00	0	A	$118.89
13181	C/KELV C365H J WHWH V802	E	EA	CAXP	G	37					$0.00	0	$0.00	0	$122.19	37	$0.00	0	A	$122.19
13182	C/KELV C170T J WHWH V803	E	EA	CAXP	G	51					$0.00	0	$225.45	51	$0.00	0	$0.00	0	C	$225.45
13183	C/KELV C250T J WHWH V803	E	EA	CAXP	G	48					$0.00	0	$212.19	48	$0.00	0	$0.00	0	C	$212.19
13184	C/SHACK C190 H WWWW V802	E	EA	CAXP	G	47					$0.00	0	$207.77	47	$0.00	0	$0.00	0	C	$207.77
13186	C/KELV C380B J WHWH V803	E	EA	CAXP	G	82					$0.00	0	$0.00	0	$270.81	82	$0.00	0	A	$270.81
13187	C/KELV N375T J WHWH V803	E	EA	CAXP	G	492					$0.00	0	$0.00	0	$1,624.85	492	$0.00	0	A	$1,624.85
13188	C/KELV C410B J WHWH V803	E	EA	CAXP	G	54					$0.00	0	$0.00	0	$178.34	54	$0.00	0	A	$178.34
13189	C/KELV N400H J WHWH V803	E	EA	CAXP	G	435					$0.00	0	$0.00	0	$1,436.61	435	$0.00	0	A	$1,436.61
13190	C/KELV F310 J WHWH V803	E	EA	CAXP	G	3					$0.00	0	$0.00	0	$0.00	0	$6.89	3	F	$6.89
13191	C/KELV C420T J WHWH V802	E	EA	CAXP	G	122					$0.00	0	$0.00	0	$402.91	122	$0.00	0	A	$402.91
13195	C/LEON C370 J WHWH V802	E	EA	CAXP	G	3					$0.00	0	$0.00	0	$9.91	3	$0.00	0	A	$9.91
13198	C/KELV C190 J WHWH V802	E	EA	CAXP	G	181					$0.00	0	$800.12	181	$0.00	0	$0.00	0	C	$800.12
13199	C/KELV C270 J WHWH V802	E	EA	CAXP	G	123					$0.00	0	$543.73	123	$0.00	0	$0.00	0	C	$543.73
13200	C/SHACK C420T H WWWW V802	E	EA	CAXP	G	30					$0.00	0	$0.00	0	$99.08	30	$0.00	0	A	$99.08
13201	C/SHACK N400H H WWWW V802	E	EA	CAXP	G	875					$0.00	0	$0.00	0	$2,889.73	875	$0.00	0	A	$2,889.73
13202	C/SHACK N395B J ALAL V802	E	EA	CAXP	G	5					$0.00	0	$0.00	0	$16.51	5	$0.00	0	A	$16.51
13203	C/SHACK N405T J ALAL V802	E	EA	CAXP	G	377					$0.00	0	$0.00	0	$1,245.06	377	$0.00	0	A	$1,245.06
13205	C/F&P N369B H WWWW	L	EA	CAFR	G	641					$0.00	0	$0.00	0	$0.00	0	$0.00	0	A	$0.00
13209	C/KELV C120 J WHWH V803	E	EA	CAXP	G	79					$0.00	0	$349.22	79	$0.00	0	$0.00	0	C	$349.22
13212	C/LEON C365H J WHWH V802	E	EA	CAXP	G	5					$0.00	0	$0.00	0	$16.51	5	$0.00	0	A	$16.51
13215	C/KELV N375T J SASA V802	E	EA	CAXP	G	369					$0.00	0	$0.00	0	$1,218.64	369	$0.00	0	A	$1,218.64
13216	C/KELV N395B J SASA V802	E	EA	CAXP	G	263					$0.00	0	$0.00	0	$868.57	263	$0.00	0	A	$868.57

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PART NUMB.	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	ENG 1 COSTS	ENG 1 TRX C	ENG 2 COST	ENG 2 TRX A	ENG 3 COSTS	ENG 3 TRX F	ENG 4 COST	ENG 4 TRX C	ENG 5 COSTS	ENG 5 TRX A	ENG 6 COST	ENG 6 C TRX C F	TOTAL COSTS
13217	C/KELV N405T J SASA V802	E	EA	CAXP	G	315					$0.00	0	$0.00	0	$1,040.30	315	$0.00	0 A	$1,040.30
13218	C/KELV N400H J SASA V802	E	EA	CAXP	G	725					$0.00	0	$0.00	0	$2,394.35	725	$0.00	0 A	$2,394.35
13220	C/FRIG N395B J SASA V802	E	EA	CAXP	G	12					$0.00	0	$0.00	0	$39.63	12	$0.00	0 A	$39.63
13223	C/LEON C380B J WHWH V802	E	EA	CAXP	G	6					$0.00	0	$0.00	0	$19.82	6	$0.00	0 A	$19.82
13226	C/SHACK F230 H WWWW V803	E	EA	CAXP	G	16					$0.00	0	$70.73	16	$0.00	0	$0.00	0 C	$70.73
13227	C/FRIG C190 J WHWH V802	E	EA	CAXP	G	17					$0.00	0	$75.15	17	$0.00	0	$0.00	0 C	$75.15
13228	C/KELV N375T J WHWH V814	E	EA	CAXP	G	39					$0.00	0	$0.00	0	$128.80	39	$0.00	0 A	$128.80
13229	C/KELV N405T J WHWH V814	E	EA	CAXP	G	3					$0.00	0	$0.00	0	$9.91	3	$0.00	0 A	$9.91
13230	C/KELV N400H J WHWH V814	E	EA	CAXP	G	46					$0.00	0	$0.00	0	$151.92	46	$0.00	0 A	$151.92
13231	C/KELV N375T J ALAL V814	E	EA	CAXP	G	35					$0.00	0	$0.00	0	$115.59	35	$0.00	0 A	$115.59
13232	C/KELV N405T J ALAL V814	E	EA	CAXP	G	2					$0.00	0	$0.00	0	$6.61	2	$0.00	0 A	$6.61
13233	C/KELV N400H J ALAL V814	E	EA	CAXP	G	45					$0.00	0	$0.00	0	$148.61	45	$0.00	0 A	$148.61
13234	C/KELV N375T J SASA V814	E	EA	CAXP	G	15					$0.00	0	$0.00	0	$49.54	15	$0.00	0 A	$49.54
13235	C/KELV N405T J SASA V814	E	EA	CAXP	G	2					$0.00	0	$0.00	0	$6.61	2	$0.00	0 A	$6.61
13236	C/KELV N400H J SASA V814	E	EA	CAXP	G	17					$0.00	0	$0.00	0	$56.14	17	$0.00	0 A	$56.14
13242	C/FRIG N400H J ALAL V814	E	EA	CAXP	G	12					$0.00	0	$0.00	0	$39.63	12	$0.00	0 A	$39.63
13245	C/FRIG N400H J SASA V814	E	EA	CAXP	G	18					$0.00	0	$0.00	0	$59.45	18	$0.00	0 A	$59.45
13248	C/LEON N375T J ALAL V814	E	EA	CAXP	G	50					$0.00	0	$0.00	0	$165.13	50	$0.00	0 A	$165.13
13252	C/LEON C250T J FAFA V802	E	EA	CAXP	G	30					$0.00	0	$132.62	30	$0.00	0	$0.00	0 C	$132.62
13253	C/LEON C335T J SASA V802	E	EA	CAXP	G	152					$0.00	0	$0.00	0	$501.99	152	$0.00	0 A	$501.99
13254	C/LEON N400H J SASA V814	E	EA	CAXP	G	45					$0.00	0	$0.00	0	$148.61	45	$0.00	0 A	$148.61
13255	C/LEON N375T J SASA V814	E	EA	CAXP	G	45					$0.00	0	$0.00	0	$148.61	45	$0.00	0 A	$148.61
13257	C/KELV F310 J ALAL V802	E	EA	CAXP	G	5					$0.00	0	$0.00	0	$0.00	0	$11.49	5 F	$11.49
13258	C/SHACK N395B J SASA V802	E	EA	CAXP	G	5					$0.00	0	$0.00	0	$16.51	5	$0.00	0 A	$16.51
13259	C/SHACK N375T H WWWW V814	E	EA	CAXP	G	5					$0.00	0	$0.00	0	$16.51	5	$0.00	0 A	$16.51
13260	C/SHACK N405T H WWWW V814	E	EA	CAXP	G	8					$0.00	0	$0.00	0	$26.42	8	$0.00	0 A	$26.42
13261	C/SHACK N400H H WWWW V814	E	EA	CAXP	G	8					$0.00	0	$0.00	0	$26.42	8	$0.00	0 A	$26.42
13262	C/SHACK N375T J ALAL V814	E	EA	CAXP	G	2					$0.00	0	$0.00	0	$6.61	2	$0.00	0 A	$6.61
13263	C/SHACK N405T J ALAL V814	E	EA	CAXP	G	6					$0.00	0	$0.00	0	$19.82	6	$0.00	0 A	$19.82
13264	C/SHACK N400H J ALAL V814	E	EA	CAXP	G	6					$0.00	0	$0.00	0	$19.82	6	$0.00	0 A	$19.82
13265	C/SHACK N375T J SASA V814	E	EA	CAXP	G	3					$0.00	0	$0.00	0	$9.91	3	$0.00	0 A	$9.91
13266	C/SHACK N405T J SASA V814	E	EA	CAXP	G	6					$0.00	0	$0.00	0	$19.82	6	$0.00	0 A	$19.82
13267	C/SHACK N400H J SASA V814	E	EA	CAXP	G	6					$0.00	0	$0.00	0	$19.82	6	$0.00	0 A	$19.82
15352	C/F&P N375T H WWWW	L	EA	CAFP	G	225					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00
15354	C/F&P N400H H WWWW	L	EA	CAFP	G	218					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00
15355	C/F&P N395B H WWWW	L	EA	CAFP	G	666					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00
15811	C/F&P C365H H WWWW V812	E	EA	CAAU	G	310					$0.00	0	$0.00	0	$1,023.79	310	$0.00	0 A	$1,023.79
15813	C/SHACK C365H J WHWH	L	EA	CASH	G	427					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00
15814	C/F&P H160E J WHWH V812	E	EA	CAAU	G	1637					$0.00	0	$0.00	0	$0.00	0	$3,761.94	1637 F	$3,761.94
15815	C/F&P H220E J WHWH V812	E	EA	CAAU	G	1089					$0.00	0	$0.00	0	$0.00	0	$2,502.60	1089 F	$2,502.60
15816	C/F&P H360E J WHWH V812	E	EA	CAAU	G	952					$0.00	0	$0.00	0	$0.00	0	$2,187.76	952 F	$2,187.76
15817	C/F&P H510E J WHWH V812	E	EA	CAAU	G	485					$0.00	0	$0.00	0	$0.00	0	$1,114.56	485 F	$1,114.56
15818	C/F&P H701E J WHWH V812	E	EA	CAAU	G	457					$0.00	0	$0.00	0	$0.00	0	$1,050.22	457 F	$1,050.22
15823	C/F&P H160S J WHWH V812	E	EA	CAAU	G	2126					$0.00	0	$0.00	0	$0.00	0	$4,885.70	2126 F	$4,885.70
15824	C/F&P H220S J WHWH V812	E	EA	CAAU	G	1124					$0.00	0	$0.00	0	$0.00	0	$2,583.03	1124 F	$2,583.03
15825	C/F&P H360S J WHWH V812	E	EA	CAAU	G	948					$0.00	0	$0.00	0	$0.00	0	$2,178.57	948 F	$2,178.57
15826	C/FRIG F310 J SASA	L	EA	CAFR	G	129					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00
15827	C/FRIG C370 J SASA	L	EA	CAFR	G	167					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00
15828	C/FRIG C365H J SASA	L	EA	CAFR	G	42					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00
15829	C/FRIG C335T J SASA	L	EA	CAFR	G	20					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00
15830	C/FRIG C390T J SASA	L	EA	CAFR	G	6					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00
15831	C/FRIG C380B J SASA	L	EA	CAFR	G	325					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00
15834	C/FRIG C410B J SASA	L	EA	CAFR	G	11					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00

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PART NUMB.	DESCRIPTION	EXPORT OR LOCAL	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	ENG 1 COSTS	ENG 1 TRX C	ENG 2 COST	ENG 2 TRX A	ENG 3 COSTS	ENG 3 TRX F	ENG 4 COST	ENG 4 TRX C	ENG 5 COSTS	ENG 5 TRX A	ENG 6 COST	ENG 6 C TRX C F	TOTAL COSTS
15836	C/KELV C365H J SASA	L	EA	CAKE	G	68					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00
15837	C/KELV C390T J SASA	L	EA	CAKE	G	8					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00
15840	C/KELV C410B J SASA	L	EA	CAKE	G	17					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00
15842	C/F&P F310 J WHWH V812	E	EA	CAAU	G	2376					$0.00	0	$0.00	0	$7,846.85	2376	$0.00	0 A	$7,846.85
15843	C/F&P C370 J WHWH V812	E	EA	CAAU	G	2807					$0.00	0	$0.00	0	$9,270.25	2807	$0.00	0 A	$9,270.25
15844	C/F&P C365H J WHWH V812	E	EA	CAAU	G	547					$0.00	0	$0.00	0	$1,806.49	547	$0.00	0 A	$1,806.49
15845	C/F&P C335T J WHWH V812	E	EA	CAAU	G	1827					$0.00	0	$0.00	0	$6,033.75	1827	$0.00	0 A	$6,033.75
15847	C/F&P C390T J WHWH V812	E	EA	CAAU	G	2501					$0.00	0	$0.00	0	$8,259.67	2501	$0.00	0 A	$8,259.67
15848	C/F&P N375T J WHWH V812	E	EA	CAAU	G	1894					$0.00	0	$0.00	0	$6,255.02	1894	$0.00	0 A	$6,255.02
15849	C/F&P C380B J WHWH V812	E	EA	CAAU	G	1838					$0.00	0	$0.00	0	$6,070.08	1838	$0.00	0 A	$6,070.08
15850	C/F&P C420T J WHWH V812	E	EA	CAAU	G	2011					$0.00	0	$0.00	0	$6,641.42	2011	$0.00	0 A	$6,641.42
15852	C/F&P N405T J WHWH V812	E	EA	CAAU	G	1410					$0.00	0	$0.00	0	$4,656.59	1410	$0.00	0 A	$4,656.59
15853	C/F&P C415H J WHWH V812	E	EA	CAAU	G	792					$0.00	0	$0.00	0	$2,615.62	792	$0.00	0 A	$2,615.62
15854	C/F&P N400H J WHWH V812	E	EA	CAAU	G	727					$0.00	0	$0.00	0	$2,400.95	727	$0.00	0 A	$2,400.95
15855	C/F&P C410B J WHWH V812	E	EA	CAAU	G	3548					$0.00	0	$0.00	0	$11,717.44	3548	$0.00	0 A	$11,717.44
15856	C/F&P N395B J WHWH V812	E	EA	CAAU	G	4513					$0.00	0	$0.00	0	$14,904.39	4513	$0.00	0 A	$14,904.39
15857	C/F&P P190 J WHWH V812	E	EA	CAAU	G	112					$0.00	0	$495.10	112	$0.00	0	$0.00	0 C	$495.10
15858	C/F&P C190 J WHWH V812	E	EA	CAAU	G	667					$0.00	0	$2,948.50	667	$0.00	0	$0.00	0 C	$2,948.50
15859	C/F&P F160 J WHWH V812	E	EA	CAAU	G	832					$0.00	0	$3,677.89	832	$0.00	0	$0.00	0 C	$3,677.89
15860	C/F&P C170T J WHWH V812	E	EA	CAAU	G	1090					$0.00	0	$4,818.38	1090	$0.00	0	$0.00	0 C	$4,818.38
15861	C/F&P C270 J WHWH V812	E	EA	CAAU	G	1997					$0.00	0	$8,827.81	1997	$0.00	0	$0.00	0 C	$8,827.81
15862	C/F&P F230 J WHWH V812	E	EA	CAAU	G	1752					$0.00	0	$7,744.78	1752	$0.00	0	$0.00	0 C	$7,744.78
15863	C/F&P C250T J WHWH V812	E	EA	CAAU	G	1977					$0.00	0	$8,739.40	1977	$0.00	0	$0.00	0 C	$8,739.40
15864	C/F&P C240B J WHWH V812	E	EA	CAAU	G	2137					$0.00	0	$9,446.68	2137	$0.00	0	$0.00	0 C	$9,446.68
15865	C/FRIG C389T J WHWH	L	EA	CAFR	G	68					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00
15866	C/KELV C389T J WHWH	L	EA	CAKE	G	109					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00
15867	C/SHACK C370 J WH	L	EA	CASH	G	40					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00
15869	C/SHACK F310 J WH	L	EA	CASH	G	20					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00
15870	C/SHACK H360 J WH	L	EA	CASH	G	35					$197.18	35	$0.00	0	$0.00	0	$0.00	0 F	$197.18
15871	C/SHACK H510 J WH	L	EA	CASH	G	5					$28.17	5	$0.00	0	$0.00	0	$0.00	0 F	$28.17
15872	C/F&P N369B H WWWW V812	E	EA	CAAU	G	1449					$0.00	0	$0.00	0	$4,785.39	1449	$0.00	0 A	$4,785.39
15873	C/SHACK C120 J WH	L	EA	CASH	G	104					$0.00	0	$0.00	0	$0.00	0	$0.00	0 C	$0.00
15874	C/F&P P120 J WHWH V812	E	EA	CAAU	G	168					$0.00	0	$742.65	168	$0.00	0	$0.00	0 C	$742.65
15875	C/KELV N369B J SASA	L	EA	CAKE	G	180					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00
15876	C/FRIG N369B J SASA	L	EA	CAFR	G	120					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00
NH360	M/SANDEN H360	L	EA	C800	G	1264					$7,120.84	1264	$0.00	0	$0.00	0	$0.00	0 F	$7,120.84
UNALL	UNALLOCATED HF M/S PARTS NO	L	EA	CAHF	G	1400					$7,887.01	1400	$0.00	0	$0.00	0	$0.00	0 F	$7,887.01
UNALL	UNALLOCATED RF M/S PARTS NO	L	EA	CARF	G	2352					$0.00	0	$0.00	0	$0.00	0	$0.00	0 A	$0.00
						66828	$0.00	0	$0.00	0	$15,233.20	2704	$62,055.50	14038	$116,570.05	35297	$20,282.76	8826	$214,141.51

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	TOTAL COSTS	COST PER UNIT
M9827	HEATSHRINK LVR 127 BLACK 100M	MT	MISC	P	318	$565.66	$1.7788
M9860	SILVAFLO 40 (1.5mm)	KG	MRAW	P	631	$7,077.78	$11.2168
M9864	SOLDER 40/60 US SPEC QG571-E	KG	MIMP	P	2062	$1,491.02	$0.7231
M9865	ROD COPPER FLO 2(2.5MM DIA)	KG	MRAW	P	935	$6,988.34	$7.4742
SP0001	SCREW #8X16 AB CSK PHIL ST ZP	EA	FAST	P	328760	$6,378.73	$0.0194
SP0002	SCREW #8X16 AB PAN PHIL ST ZP	EA	FAST	P	328760	$1,464.29	$0.0045
SP0006	SCREW #8X20 AB PAN PHIL ST ZP	EA	FAST	P	408027	$4,882.65	$0.0120
SP0008	SCREW #6X12 AB TRUSS PHIL ST ZP	EA	FAST	P	79140	$2,212.53	$0.0280
SP0009	SCREW #6X16 AB TRUSS PHIL ST NP	EA	FAST	P	41095	$1,883.14	$0.0458
SP0054	SCREW #8X50 AB PAN PHIL SS	EA	FAST	P	327	$1,157.35	$3.5393
SP0055	SCREW #8X20 AB PAN PHIL SS	EA	FAST	P	66509	$2,036.61	$0.0306
SP0056	SCREW #8X12 AB PAN PHIL SS	EA	FAST	P	21212	$1,310.82	$0.0618
SP0057	SCREW #8X25 AB PAN PHIL SS	EA	FAST	P	326482	$4,450.94	$0.0136
SP0059	SCREW #8X40 AB PAN PHIL SS	EA	FAST	P	79151	$2,124.57	$0.0268
SP0201	SCREW #8X12 SP PAN NIB ST ZP	EA	FAST	P	10305632	$99,727.95	$0.0097
SP0207	SCREW 10X75 SCREWFAST CSK PHIL STZP	EA	FAST	P	200282	$4,206.55	$0.0210
SP0282	SCREW M5X20 HEX PHIL MS ST ZP	EA	FAST	P	324674	$4,604.41	$0.0142
SP0301	NUT 2BA HEX PRESSED ST ZP	EA	FAST	P	18782	$1,310.82	$0.0698
SP0302	NUT M10 HEX 17 A/F ZP	EA	FAST	P	324674	$5,580.22	$0.0172
SP0305	NUT (LOCK) 18MM	EA	FAST	P	18782	$1,464.29	$0.0780
SP0306	LOCK HOUSING	EA	FAST	P	18782	$1,361.98	$0.0725
SP0351	WASHER LOCK 5MM EXT/T ST ZP	EA	FAST	P	818083	$13,046.08	$0.0159
SP0353	WASHER 20X30X1.6 RED FIBRE	EA	FAST	P	18782	$1,464.29	$0.0780
SP0354	PIN ROLL 1/8X5/16	EA	FAST	P	82190	$4,175.69	$0.0508
SP0358	WASHER BRASS FLAT 5X10X1	EA	FAST	P	5331	$1,208.51	$0.2267
SP0461	RIVET #11X2/16 OVS/T ALI	EA	FAST	P	11545	$1,208.51	$0.1047
SP0503	TERMINAL UTILUX H1909	EA	TERM	P	10332	$12,268.16	$1.1874
SP0513	CLIP COIL 93-106-0062	EA	MISC	P	79140	$2,691.07	$0.0340
SP0558	INSULATOR AMP 2-735075-6	EA	MIMP	P	251770	$4,268.07	$0.0170
SP0591	LAMPHOLDER SHROUD	EA	PLAS	P	44735	$2,450.28	$0.0548
SP0592	LAMPHOLDER H.P.M.	EA	PLAS	P	44735	$2,198.50	$0.0491
SP0599	LAMP PYG 15W BC 110V	EA	MISC	P	227	$565.66	$2.4919
SP0600	LAMP PYG 15W BC 230V	EA	MISC	P	44508	$1,705.90	$0.0383
SP0601	TAPE 12MM VINYL 14 BLACK 1519 (66M)	RL	TAPE	P	51	$1,688.02	$33.0984
SP0602	TAPE 12MM VINYL 14 WHITE 1520 (66M)	RL	TAPE	P	1674	$2,037.75	$1.2173
SP0604	TAPE 12MM VINYL 14 BLUE 1522 (66M)	RL	TAPE	P	26	$1,585.70	$60.9885
SP0605	TAPE 12MM VINYL 14 GREEN 1523 (66M)	RL	TAPE	P	43	$2,381.37	$55.3807
SP0606	TAPE 12MM VINYL 14 YELLOW 1524 (66M	RL	TAPE	P	11	$2,178.19	$198.0173
SP0611	TAPE 18MM VINYL 1503 CLEAR (100MT)	RL	TAPE	P	69	$1,892.64	$27.4296
SP0614	TAPE 24MM FILAMENT 1305 (45M)	RL	TAPE	P	16	$1,483.39	$92.7119
SP0618	TAPE 50MM ALUMINIUM 425 (55MT)	RL	TAPE	P	28523	$7,487.89	$0.2625
SP0619	TAPE 25MM ALUMINIUM 425 (55MT)	RL	TAPE	P	1095	$1,483.39	$1.3547
SP0623	TAPE 30MM PAPER 3M SCOTCH 227(55MT)	RL	TAPE	P	1681	$2,184.70	$1.2996
SP0624	TAPE 48MM PAPER 3M SCOTCH 227(55MT)	RL	TAPE	P	1396	$3,007.40	$2.1543
SP0625	TAPE 60MM PAPER 3M SCOTCH 227(55MT)	RL	TAPE	P	616	$2,972.40	$4.8253
SP0631	STRAPPING POLY 19MM PREMIUM (2000M)	RL	TAPE	P	957	$4,878.80	$5.0980
SP0635	TAPE 60MM POLYPROP BRN 530(100MT)	RL	TAPE	P	7068	$3,467.13	$0.4905
SP0807	LABEL MC19 MATT SILVER	EA	LABL	P	324020	$1,506.84	$0.0047
SP1006	ADHESIVE-STAYMELT 2061(20KG=BAG)	KG	MISC	P	411	$820.65	$1.9967
SP1008	ADHESIVE STAYMELT P2444	KG	MISC	P	4042	$719.13	$0.1779
SP1009	ADHESIVE SUPERFLEX 334M(20KG PAILS)	KG	MISC	P	411	$565.66	$1.3763
SP1010	WAX TECHNI 20005(MICRO CRYSTALLINE)	KG	MISC	P	6549	$1,378.70	$0.2105
SP1011	PUTTY PLASTIC NO 5 (20KG BAG)	KG	MISC	P	25057	$3,525.41	$0.1407
SP1014	SEALANT MASTIC SR14(200LT/DRUM)	LT	MISC	P	15404	$853.99	$0.0554
SP1055	HOT MELT HM991	KG	MISC	P	13249	$2,402.83	$0.1814
SP1206	TIE TWIST PAPER 150MM(2500/CTN)	EA	MISC	P	327538	$8,818.60	$0.0269
SP1228	TUBING 4MM ID PVC WHITE	MT	PLAS	P	21656	$1,515.00	$0.0700
SP1238	CLIP COMPRESSION SPIRE SCB 1876	EA	MISC	P	40786	$1,821.41	$0.0447
090037	TUBE CAPILLARY 0.787X2.057X3660 635	EA	MIMP	P	98888	$2,979.57	$0.0301
091023	TUBE CAPILLARY 0.787X2.057X3050 HF	EA	MISC	P	7359	$821.44	$0.1116
12254	C/KELV C370 G WHWH V802	EA	CAXP	P	275	$0.00	$0.0000
12492	C/FRIG C370 G WHWH V803	EA	CAXP	P	18	$0.00	$0.0000
12942	C/FRIG C390T G ALAL V803	EA	CAXP	P	77	$0.00	$0.0000
203468	WASHER 304 S/S 4.3 I.DX11 O/D X0.7	EA	FAST	P	179242	$4,031.30	$0.0225
203590	SPACER TUBE	EA	PLAS	P	694690	$6,003.60	$0.0086
203717	GROMMET CONDENSER LINE 5MM	EA	MISC	P	82190	$974.91	$0.0119
203825	SWITCH LIGHT ECI-711B	EA	MISC	P	44735	$1,614.00	$0.0361
203882	CAP TUBE PROTECTION	EA	MISC	P	14778	$616.82	$0.0417
209534	RELAY FN77F13 MM5-92C 100V 50/60	EA	EXP	P	37	$863.92	$23.3492
209535	OVERLOAD FN77F13 MM3-46X 100V 50/60	EA	EXP	P	37	$619.46	$16.7422
209605	COVER PROTECTOR-NATIONAL(LRG)	EA	EXP	P	37	$863.92	$23.3492
209606	CLAMP PROTECTOR COVER	EA	EXP	P	37	$863.92	$23.3492
209607	CLIP OVERLOAD NA	EA	EXP	P	37	$863.92	$23.3492
209608	COVER CAPACITOR (SMALL)	EA	EXP	P	37	$619.46	$16.7422
209668	COMPRESSOR NA FN91Q17GA 220/24050HZ	EA	NATL	P	76431	$2,868.29	$0.0375
209686	CAPACITOR START 60MF125V 26MM DIA	EA	MIMP	P	3665	$952.42	$0.2599
209687	CAPACITOR START 100MF125V 26MM DIA	EA	MIMP	P	1336	$1,015.22	$0.7599
209699	COMPRESSOR NA S112LJAA 100V50/60	EA	NATL	P	8557	$1,288.56	$0.1506
209700	COMPRESSOR NA S075LKAA 220/240V50	EA	NATL	P	23396	$1,981.37	$0.0847
209701	COMPRESSOR NA S110LKAA 220/240V50	EA	NATL	P	35914	$2,896.07	$0.0806
209702	COMPRESSOR NA S111LKAA 220/240V50	EA	NATL	P	12222	$1,500.21	$0.1227
209706	COMPRESSOR NA S090LKAA 115V60HZ	EA	NATL	P	125	$867.25	$6.9380
209707	COMPRESSOR NA S112LKAA 115V50HZ	EA	NATL	P	724	$1,111.71	$1.5355
209708	COMPRESSOR NA S113LKAA 115V60HZ	EA	NATL	P	634	$867.25	$1.3679
209710	COMPRESSOR NA FN91Q17G O/C 115V60	EA	NATL	P	1067	$1,198.53	$1.1233
209802	RELAY P.T.C. S&Q SERIES 220/24050	EA	EXP	P	181811	$5,556.94	$0.0306
209806	RELAY P.T.C 'S' 'Q' SERIES 115V60HZ	EA	EXP	P	3166	$1,001.90	$0.3165
209816	COMPRESSOR NA FN40R80R 220/240V50HZ	EA	NATL	P	115	$1,314.33	$11.4290
209817	OVERLOAD FN40R80R 220/240V50HZ	EA	EXP	P	106	$863.92	$8.1502
209821	OVERLOAD FN50R10R 220/240V50	EA	EXP	P	2313	$915.08	$0.3956
209823	OVERLOAD FN50R 115V 60HZ	EA	EXP	P	179	$863.92	$4.8264
209826	RELAY FN50R/FN60R 115V 60HZ	EA	EXP	P	294	$863.92	$2.9385
209833	OVERLOAD FN60R12R 220/240V50	EA	EXP	P	2184	$915.08	$0.4190
209834	RELAY FN40R/50R/60R 220/240V50HZ	EA	EXP	P	4603	$1,222.02	$0.2655

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	TOTAL COSTS	COST PER UNIT
209840	OVERLOAD FN60R12T 115V 60HZ	EA	EXP	P	115	$863.92	$7.5123
209841	CAPACITOR RUN FN40,50,60R 3.5mf400V	EA	MIMP	P	4603	$1,054.73	$0.2291
209843	CAPACITOR RUN FN40,50R 10uf 230V	EA	MIMP	P	179	$952.42	$5.3208
209848	COVER COMPRESSOR PROTECTOR S SERIES	EA	EXP	P	80132	$3,262.98	$0.0407
209849	COVER COMPRESSOR PROTECTOR ROTARY	EA	EXP	P	9861	$1,182.50	$0.1199
209850	SCREW COMPRESSOR COVER S SERIES	EA	EXP	P	80132	$2,546.78	$0.0318
209851	CLIP COMPRESSOR COVER ROTARY	EA	EXP	P	9861	$1,438.29	$0.1459
209852	BRACKET CENTRE MNT ROTARY	EA	EXP	P	9861	$1,438.29	$0.1459
209853	GROMMET COMPRESSOR HOLDER ROTARY	EA	EXP	P	9861	$1,233.66	$0.1251
209860	COMPRESSOR NA FN73Q13GA O/C 115V60	EA	NATL	P	616	$1,111.71	$1.8047
209861	COMPRESSOR NA FN73F13 100V50/60HZ	EA	NATL	P	37	$1,111.71	$30.0462
209867	COMPRESSOR NA FN73Q O/C 220/240V50	EA	NATL	P	39064	$2,335.70	$0.0598
209872	RELAY FN43S 100V50/60	EA	EXP	P	8557	$989.61	$0.1156
209873	CAPACITOR RUN FN43S/FN60R 15uf 180V	EA	MIMP	P	9856	$1,243.20	$0.1261
209874	COMPRESSOR NA FN40R68T 100V50/60	EA	NATL	P	2396	$1,265.18	$0.5280
209875	RELAY(PTC) FN40R 100V50/60	EA	EXP	P	2396	$1,068.55	$0.4460
209876	OVERLOAD FN40R 100V50/60	EA	EXP	P	2396	$966.23	$0.4033
209877	CAPACITOR RUN FN40,50R 12uf 210V	EA	MIMP	P	3665	$1,054.73	$0.2878
209880	RELAY FN50R 100V50/60	EA	EXP	P	1269	$915.08	$0.7211
209881	OVERLOAD FN50R 100V50/60	EA	EXP	P	1269	$915.08	$0.7211
209883	OVERLOAD FN60R 100V50/60	EA	EXP	P	1299	$977.88	$0.7528
209887	RELAY FN60R 100V50/60HZ	EA	EXP	P	1299	$1,131.35	$0.8709
209891	CAPACITOR RUN FN60R 12uf 230V	EA	MIMP	P	115	$952.42	$8.2819
209893	COMPRESSOR NA FN50R94T 100V50/60 OC	EA	NATL	P	1269	$1,520.96	$1.1986
209894	COMPRESSOR NA FN60R12T 100V50/60 OC	EA	NATL	P	1299	$1,317.96	$1.0146
209895	COMPRESSOR NA FN50R10R 115V60 OIL C	EA	NATL	P	179	$1,265.18	$7.0680
209896	COMPRESSOR NA FN60R12R 115V60 OIL C	EA	NATL	P	115	$1,162.87	$10.1119
209897	COMPRESSOR NA FN50R10R 220/240V50OC	EA	NATL	P	2485	$1,265.18	$0.5091
209898	COMPRESSOR NA FN60R12R 220/24050 OC	EA	NATL	P	2384	$1,316.34	$0.5522
280335	TUBE CAPILLARY 0.66X1.727X3050 525	EA	MIMP	P	96348	$2,537.57	$0.0263
313096	TUBE COPPER ALUM TAIL ASSY P800	EA	MIMP	P	5090	$1,131.59	$0.2223
322130	BAG POLY (230MMX400MM)	EA	MISC	P	157056	$2,816.55	$0.0179
359165	LOCK - BARREL & KEYS	EA	MIMP	P	18782	$1,157.05	$0.0616
392175	LABEL 100VOLT 50/60 HZ	EA	LABL	P	5368	$1,826.62	$0.3403
402014	LABEL 220-250V	EA	LABL	P	69046	$888.10	$0.0129
402261	LID UTILITY BIN AS MOULDED	EA	PLAS	P	70766	$2,181.02	$0.0308
402520	LABEL 100-115V	EA	LABL	P	1309	$478.85	$0.3658
804055	TAPE 3M 4085 D/S 18MMX1.0MM(18MT)	RL	TAPE	P	579	$3,630.36	$6.2701
805176	GROMMET EVAP FC	EA	MISC	P	81572	$1,916.39	$0.0235
805422	HOUSING RECEPTACLE TIMER DEFROST	EA	MIMP	P	40786	$1,463.99	$0.0359
805439	FILTER STRAINER BTTM FC N/F	EA	MISC	P	51392	$1,333.01	$0.0259
812249	CABLE SUPPLY FUJI TERMINATED	EA	HARN	P	120	$1,159.40	$9.6617
812261	NAMEPLATE SHARP	EA	MIMP	P	5014	$1,232.14	$0.2457
812302	TUBE CARDBOARD	EA	MISC	P	41095	$1,973.62	$0.0480
814133	HARNESS LEAD CAPACITOR	EA	HARN	P	74	$647.83	$8.7545
815055	CLIP DISCHARGE LINE	EA	MIMP	P	17854	$1,054.73	$0.0591
815056	SLEEVE DISCHARGE LINE	EA	MIMP	P	17854	$1,054.73	$0.0591
815104	PLUG FOAM 80X80X12MM PINK	EA	MISC	P	7359	$775.83	$0.1054
815117	DRAIN ELBOW BODY	EA	PLAS	P	41095	$2,003.40	$0.0488
815147	EVAP COIL BACK & BOTTOM H160	EA	SYST	P	7970	$2,670.76	$0.3351
815148	EVAP COIL BACK & BOTTOM H220	EA	SYST	P	15446	$2,419.43	$0.1566
815149	EVAP COIL BACK & BOTTOM H360	EA	SYST	P	10320	$2,293.79	$0.2223
815150	EVAP COIL BACK & BOTTOM H510	EA	SYST	P	3806	$2,293.79	$0.6027
815151	EVAP COIL BACK & BOTTOM H701	EA	SYST	P	3553	$2,395.29	$0.6742
815158	TUBE ACCUMULATOR	EA	SYST	P	59809	$4,259.27	$0.0712
815161	PIN COMPRESSOR MNTG ROTARY	EA	MIMP	P	41980	$1,259.36	$0.0300
815162	GROMMET COMPRESSOR MNTG ROTARY	EA	MIMP	P	41980	$1,975.55	$0.0471
815191	SPACER FOAM BARRIER	EA	MISC	P	721778	$17,817.02	$0.0247
815193	GROMMET DRAIN OUTLET HF SPICE	EA	PLAS	P	3806	$963.60	$0.2532
815198	CLIP HARNESS HF NK-5N NYLON	EA	FAST	P	23885	$1,921.42	$0.0804
815212	LABEL REFLECTOR HF	EA	LABL	P	23885	$1,135.07	$0.0475
815285	LABEL EARTH JAPANESE	EA	LABL	P	25743	$836.95	$0.0325
815436	BAG POLY 800X700X1280X50mu	EA	MISC	P	23416	$3,541.45	$0.1512
815437	BAG POLY 1100X760X1280X50mu	EA	MISC	P	10320	$872.60	$0.0846
815438	BAG POLY 1300X900X1320X50mu	EA	MISC	P	3806	$821.44	$0.2158
815439	BAG POLY 1700X900X1320X50mu	EA	MISC	P	3553	$1,135.12	$0.3195
815492	LAMPHOLDER HF	EA	MIMP	P	23885	$1,259.36	$0.0527
815532	HARNESS LAMP HF	EA	HARN	P	23885	$3,366.07	$0.1409
815536	RETAINER CAPACITOR START	EA	MISC	P	7148	$719.13	$0.1006
815537	CONTROL RANCO K54 L1866-0	EA	CONT	P	42411	$5,299.31	$0.1250
815619	CABLE CAPACITOR START	EA	HARN	P	9928	$1,862.67	$0.1876
815730	CARTON BASE PAD POLYSTYRENE H160	EA	MISC	P	7970	$1,205.74	$0.1513
815731	CARTON BASE PAD POLYSTYRENE H220	EA	CART	P	15446	$1,537.17	$0.0995
815732	CARTON BASE PAD POLYSTYRENE H360	EA	CART	P	10320	$1,549.24	$0.1501
815793	SPACER POLY 36X36X36	EA	MISC	P	23885	$1,137.98	$0.0476
815826	CONDENSER FORMED HF160	EA	SYST	P	7970	$3,044.58	$0.3820
815827	CONDENSER FORMED HF220	EA	SYST	P	15446	$2,498.02	$0.1617
815828	CONDENSER FORMED HF360	EA	SYST	P	10320	$2,498.02	$0.2421
815829	CONDENSER FORMED HF 510	EA	SYST	P	3806	$2,383.22	$0.6262
815830	CONDENSER FORMED HF701	EA	SYST	P	3553	$2,383.22	$0.6708
815837	BASKET HF WIDE PLAIN	EA	WIRE	P	14270	$2,389.27	$0.1674
815838	BASKET HF NARROW PLAIN	EA	WIRE	P	56379	$3,110.81	$0.0552
815844	HARNESS CONTROL STANDARD HF	EA	HARN	P	40123	$2,670.02	$0.0665
815845	HARNESS CONTROL ELECTO HF	EA	HARN	P	23885	$1,838.67	$0.0770
815846	HARNESS EARTH COMPRESSOR RECIP.	EA	HARN	P	30600	$2,286.98	$0.0747
815847	HARNESS CAPACITOR ROTARY	EA	HARN	P	18793	$1,518.56	$0.0808
815848	HARNESS EARTH CONTROL	EA	HARN	P	41095	$2,904.32	$0.0707
815854	CLIP COMPRESSOR MNTG ROTARY	EA	MIMP	P	41980	$1,515.14	$0.0361
815870	LEAFLET WARRANTY F&P EXPORT HF	EA	DOCU	P	7839	$1,896.36	$0.2419
815925	HARNESS EARTH COMPRESSOR	EA	HARN	P	208515	$8,529.92	$0.0409
816049	CIRCLIP-BTM HINGE PIN	EA	MISC	P	11545	$667.97	$0.0579
816082	CLIP CONDENSER TUBE	EA	MISC	P	12492	$2,517.01	$0.2015
816083	CLIP RING	EA	PLAS	P	1136359	$11,958.47	$0.0105
816141	CAP RED VINYL PLASTISOL 3/16IN	EA	MIMP	P	530009	$2,845.22	$0.0054

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	TOTAL COSTS	COST PER UNIT
816146	CAP PLASTIC WHITE 6.35	EA	MIMP	P	270979	$1,924.40	$0.0071
816147	CAP GREEN VINYL PLASTISOL 5/16IN	EA	MIMP	P	281808	$952.42	$0.0034
816678	LABEL INSTRUCTION JAPAN	EA	MIMP	P	5014	$1,283.30	$0.2559
816966	CABLE SUPPLY 230V	EA	HARN	P	187224	$6,561.98	$0.0350
817150	INSULATOR PHIAL TUBE CONTROL WELL	EA	PLAS	P	59809	$2,021.81	$0.0338
817236	PLATE REINFORCEMENT HF	EA	MISC	P	38603	$1,846.76	$0.0478
817282	BOOKLET INSTR PACK ELECT FC-17TA-WH	EA	DOCU	P	513	$1,651.90	$3.2201
817283	BOOKLET INSTR PACK ELECT FC-22TA-WH	EA	DOCU	P	4010	$1,651.90	$0.4119
817284	BOOKLET INSTR PACK ELECT FC-36TA-WH	EA	DOCU	P	491	$1,651.90	$3.3644
817329	SEALANT FOAM HF HANDLE	EA	MISC	P	34883	$616.82	$0.0177
817344	PLATE LOCK HF	EA	MISC	P	17354	$1,095.89	$0.0631
817360	LABEL SPECIFICATION SH-22SL	EA	LABL	P	4034	$577.50	$0.1432
817361	BOOKLET INSTR & WARRANTY SANDEN	EA	DOCU	P	8190	$2,314.77	$0.2826
817362	LABEL SPECIFICATION SH-360SL	EA	LABL	P	1588	$588.82	$0.3708
817419	LABEL PCB HF SHARP	EA	LABL	P	5014	$530.01	$0.1057
817430	HARNESS PCB HF	EA	MISC	P	23885	$1,840.11	$0.0770
817478	BOOKLET FREEZE WITH EASE F&P	EA	DOCU	P	71067	$6,333.09	$0.0891
817479	BOOKLET FREEZE WITH EASE	EA	DOCU	P	10433	$2,305.61	$0.2210
817519	PIN HINGE PLATED	EA	MISC	P	51298	$2,486.76	$0.0485
817760	LABEL PCB HF OYST	EA	LABL	P	18871	$1,246.20	$0.0660
817762	BOOKLET 'USE & CARE' HF FP LOC AUST	EA	DOCU	P	17710	$1,896.36	$0.1071
817763	BOOKLET 'USE & CARE' HF EX SHACK	EA	DOCU	P	16783	$1,896.36	$0.1130
818078	LABEL CAUTION PACK,G SANDON HF V810	EA	LABL	P	32760	$1,165.55	$0.0356
818079	CLIP EARTH HFV810	EA	MISC	P	611	$702.59	$1.1499
818091	EVAP COIL TOP & SIDES H160	EA	SYST	P	7970	$2,849.64	$0.3575
818092	EVAP COIL TOP & SIDES H220	EA	SYST	P	15446	$2,395.29	$0.1551
818093	EVAP COIL TOP & SIDES H360	EA	SYST	P	10320	$2,395.29	$0.2321
818094	EVAP COIL TOP & SIDES H510	EA	SYST	P	3806	$2,168.12	$0.5697
818095	EVAP COIL TOP & SIDES H701	EA	SYST	P	3553	$2,395.29	$0.6742
818121	LABEL SPECIFICATION SH-510SL	EA	LABL	P	1269	$592.44	$0.4669
818122	LABEL SPECIFICATION SH-701SL	EA	LABL	P	1299	$587.61	$0.4524
818196	PLUG PLASTIC OYSTER HF	EA	PLAS	P	164380	$3,016.24	$0.0183
818206	GROMMET DRAIN OUTLET HF OYST	EA	PWIP	P	88889	$36,499.03	$0.4106
818216	LABEL FREEZER STORAGE GUIDE HF	EA	LABL	P	8048	$1,302.90	$0.1619
818237	BAR TORSION PAINTED LH H160	EA	WIRE	P	7970	$3,101.28	$0.3891
818238	BAR TORSION PAINTED RH H160	EA	WIRE	P	7970	$2,961.88	$0.3716
818239	BAR TORSION PAINTED LH H220	EA	WIRE	P	15446	$2,105.69	$0.1363
818240	BAR TORSION PAINTED RH H220	EA	WIRE	P	15446	$2,139.32	$0.1385
818241	BAR TORSION PAINTED LH H360	EA	WIRE	P	10320	$1,912.96	$0.1854
818242	BAR TORSION PAINTED RH H360	EA	WIRE	P	10320	$1,974.15	$0.1913
818243	BAR TORSION PAINTED LH H510	EA	WIRE	P	3806	$1,817.95	$0.4777
818244	BAR TORSION PAINTED RH H510	EA	WIRE	P	3806	$1,805.08	$0.4743
818245	BAR TORSION PAINTED LH H701	EA	WIRE	P	3553	$1,818.75	$0.5119
818246	BAR TORSION PAINTED RH H701	EA	WIRE	P	3553	$1,817.95	$0.5117
818252	PIN LOCK HF	EA	MISC	P	18782	$1,540.75	$0.0820
818320	CABLE CONTROL RECIP STAND HF	EA	HARN	P	9701	$1,400.79	$0.1444
818321	CABLE CONTROL RECIP ELECT HF	EA	HARN	P	14843	$1,427.08	$0.0961
818322	CABLE COMP RECIP HF	EA	HARN	P	30134	$2,048.37	$0.0680
818323	HARNESS COMP ROT STAND HF	EA	HARN	P	4693	$1,157.07	$0.2466
818324	CABLE CONTROL ROT HF	EA	HARN	P	9936	$1,210.55	$0.1218
818325	HARNESS COMP ROT ELECT HF	EA	HARN	P	5062	$954.77	$0.1886
818326	HARNESS COMP RECIP HF	EA	HARN	P	12567	$1,039.17	$0.0827
818327	HARNESS TERM BLOCK HF	EA	HARN	P	68408	$5,189.81	$0.0759
822220	TUBE COPPER ALUM TAIL ASS C260,C350	EA	MIMP	P	10074	$1,137.74	$0.1129
825039	BAG MINIGRIP 62MMX75MM PRINTED	EA	MISC	P	162030	$1,128.38	$0.0070
850266	CLIP COMPRESSOR	EA	MISC	P	710116	$8,249.57	$0.0116
850274	PIN PIVOT	EA	MISC	P	162337	$2,602.40	$0.0160
850285	FILTER 7GM	EA	MIMP	P	197250	$4,074.43	$0.0207
850300	EVAPORATOR PLATE P120	EA	COOL	P	3701	$1,734.49	$0.4687
850325	LABEL SILVER REFLECTOR	EA	LABL	P	143623	$2,235.88	$0.0156
850375	HARNESS TERMINAL BLOCK	EA	HARN	P	94811	$3,076.16	$0.0324
850388	HARNESS LAMP	EA	HARN	P	44735	$1,159.40	$0.0259
850706	BRACKET HINGE DAIRY BAR	EA	PLAS	P	64670	$2,606.99	$0.0403
850806	LEVELLING FOOT M10 PLAIN	EA	MIMP	P	240000	$952.42	$0.0040
850811	LEAFLET INSTRUCTION CONDENSER MNTG	EA	DOCU	P	156714	$4,658.88	$0.0297
850856	CARTON TOP INNER 525	EA	CART	P	97696	$4,125.04	$0.0422
850857	CARTON SLEEVE 525	EA	CART	P	48848	$3,338.72	$0.0683
850890	CARTON CARDBOARD SIZE A	EA	CART	P	5108	$1,940.71	$0.3799
850891	PACKER LINER C110,F100,P110	EA	CART	P	10216	$1,974.99	$0.1933
851300	EVAP PLATE BLANK	EA	COOL	P	21220	$2,417.67	$0.1139
851335	CONTROL RANCO K60P1037	EA	CONT	P	5381	$4,077.09	$0.7577
852031	CLIP BTTM THROAT HEATER	EA	MISC	P	198294	$4,793.32	$0.0242
852044	SHELF FC PLAIN 525	EA	WIRE	P	67960	$3,233.77	$0.0476
852208	TUBE DRAIN FREEZERS	EA	MISC	P	19827	$821.44	$0.0414
852267	HARNESS EARTH CONTROL	EA	HARN	P	18714	$1,479.95	$0.0791
852330	CONTROL RANCO K50 P1172	EA	CONT	P	17548	$4,625.46	$0.2636
852331	LABEL CONTROL (852330)	EA	LABL	P	17498	$234.39	$0.0134
852402	TERMINAL INSULATOR BLOCK	EA	PLAS	P	18714	$1,310.37	$0.0700
852711	SHELF FC PLAIN	EA	WIRE	P	19827	$1,942.68	$0.0980
853022	SPRING RETURN EVAPORATOR	EA	MISC	P	327	$565.66	$1.7298
853293	INSULATION EVAP DOOR P190	EA	MISC	P	219	$565.66	$2.5829
853763	INSULATION CHILL TRAY P190	EA	MISC	P	259	$616.82	$2.3815
854900	SHELF GLASS 440MMX300MM	EA	MISC	P	38173	$1,412.04	$0.0370
856859	BAG POLY 620X530X1800/50MU	EA	MISC	P	48848	$2,757.68	$0.0565
870172	CLIP F.C. SHELF SUPPORT	EA	PLAS	P	1304218	$13,159.40	$0.0101
871015	PIN HINGE TOP RF	EA	MISC	P	144000	$2,907.32	$0.0202
871032	TERMINAL SPRING CONT. BOX 635	EA	MISC	P	98219	$1,333.01	$0.0136
871040	SPRING CONTROL BOX DOOR	EA	MISC	P	98888	$1,399.28	$0.0142
871041	CLIP ROLLER	EA	MISC	P	216762	$2,798.21	$0.0129
871077	LAMP PILOT 110V 15W SES(E14)	EA	MISC	P	7235	$667.97	$0.0923
871083	SPRING DOOR BUTTER COMP.	EA	MISC	P	66509	$2,148.62	$0.0323
871141	SCREW 8X25 SP PAN NIB PHIL STZP	EA	FAST	P	221166	$3,364.49	$0.0152
871143	DUCT HARNESS PC 1000MM	EA	PLAS	P	14611	$1,712.29	$0.1172
871149	BASKET FC BTTM F/F WIDE K,F	EA	WIRE	P	16717	$2,782.38	$0.1664

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	TOTAL COSTS	COST PER UNIT
871150	BASKET FC BTTM NARROW K,F	EA	WIRE	P	48170	$2,600.80	$0.0540
871154	DUCT HARNESS PC 1430MM	EA	PLAS	P	23251	$2,357.44	$0.1014
871168	EVAP FROST FREE	EA	COOL	P	33947	$6,588.59	$0.1941
871181	PLUG FAN MNTG	EA	PLAS	P	39570	$2,283.33	$0.0577
871182	GROMMET FAN MOUNTING	EA	MISC	P	81572	$2,133.88	$0.0262
871196	HEATER & CABLE HC 230V	EA	MIMP	P	10983	$1,259.36	$0.1147
871225	DUCT HARNESS FC 485MM	EA	PLAS	P	15556	$1,515.00	$0.0974
871227	DUCT HARNESS FC 1240MM	EA	PLAS	P	7562	$1,562.49	$0.2066
871228	DUCT HARNESS FC 1320MM	EA	PLAS	P	30965	$2,231.19	$0.0721
871302	TERMINAL NEUTRAL CONTROL BOX	EA	TERM	P	98219	$14,191.20	$0.1445
871312	LAMP PILOT 250V 15W SES 4(E14)	EA	MISC	P	115649	$2,252.41	$0.0195
871374	LEAFLET HANDLE FITTING INSTRUCTIONS	EA	DOCU	P	10176	$1,947.52	$0.1914
871377	BEARING IDS-26-SB5S	EA	MISC	P	46180	$1,179.54	$0.0255
871378	DUCT HARNESS PC 770MM	EA	PLAS	P	14161	$2,092.47	$0.1478
871379	DUCT HARNESS PC 910MM	EA	PLAS	P	13431	$1,515.00	$0.1128
871380	DUCT HARNESS PC 1175MM	EA	PLAS	P	13298	$1,948.19	$0.1465
871381	DUCT DRAIN PC 1295MM	EA	MISC	P	14513	$565.66	$0.0390
871387	SHELF FC TOP NO FROST BASE PLAIN	EA	WIRE	P	17862	$1,797.27	$0.1006
871390	PIN ROLLER PLAIN	EA	STUC	P	190000	$2,979.95	$0.0157
871406	HARNESS CONT BOX-TERM BOX C335,N325	EA	HARN	P	14161	$1,547.17	$0.1093
871407	HARNESS CONT BOX-TERM BOX	EA	HARN	P	26618	$1,891.98	$0.0711
871408	HARNESS CONT BOX-TERM BOX C370	EA	HARN	P	13259	$1,558.91	$0.1176
871409	HARNESS CONT BOX-TERM BOX	EA	HARN	P	43144	$3,356.14	$0.0778
871412	CONTROL & FUSE ASSY BARE	EA	MIMP	P	31161	$1,994.72	$0.0640
871450	HARNESS EARTH FROST FREE	EA	HARN	P	39570	$2,619.66	$0.0662
871457	SCREW M5X12MM TRUSS PH TYPE '1'	EA	FAST	P	23402	$1,427.88	$0.0610
871470	CARTON TOP INNER 635	EA	CART	P	104236	$4,290.68	$0.0412
871516	BAG POLY 740X660X2000/50MU	EA	MISC	P	104236	$5,337.47	$0.0512
871592	BASKET FC BTTM F/F WIDE SHACK	EA	WIRE	P	1271	$1,306.20	$1.0277
871597	BASKET FC BTTM NARROW SHACK	EA	WIRE	P	4980	$1,501.74	$0.3016
871628	LABEL BRAND IDENT KELV	EA	LABL	P	58746	$836.95	$0.0142
871629	LABEL BRAND IDENT FRIG	EA	LABL	P	24227	$734.63	$0.0303
871632	LABEL BRAND IDENT SHACK	EA	LABL	P	22103	$581.16	$0.0263
871648	SHELF SLIDING WHITE BTTM FC & VF	EA	WIRE	P	52015	$3,139.35	$0.0604
871650	SHELF TOP FC F/F PLAIN	EA	WIRE	P	17862	$1,601.58	$0.0897
871651	SHELF TOP FC PLAIN	EA	WIRE	P	20071	$1,515.00	$0.0755
871655	PARTITION PLAIN HC	EA	WIRE	P	11545	$1,916.28	$0.1660
871880	PIN CENTRE HINGE	EA	MISC	P	110583	$2,051.45	$0.0186
871910	COVER EVAP ASSY N/FROST UNPAINTED	EA	PNTP	P	33006	$18,146.98	$0.5498
871912	NUT WELD CW-Y06H J.R.HANCOCK	EA	MISC	P	37000	$1,258.69	$0.0340
871916	INSULATION CROSS RAIL HC	EA	MISC	P	11545	$770.29	$0.0667
871976	LABEL BRAND IDENT LEON	EA	LABL	P	421	$478.85	$1.1374
871996	CLIP CABLE 'P' NK-4N	EA	MISC	P	11545	$719.13	$0.0623
872006	EVAP PLATE BLANK	EA	COOL	P	10247	$2,137.96	$0.2086
872080	SHELF FC TOP PLAIN 525	EA	WIRE	P	18128	$2,008.70	$0.1108
872132	BASKET FRUIT FINISHED WHITE	EA	WIRE	P	1508	$1,758.24	$1.1659
872243	SHELF PLAIN	EA	WIRE	P	98887	$4,297.99	$0.0435
872246	SHELF TALL STORAGE PLAIN	EA	WIRE	P	24274	$1,952.30	$0.0804
872281	SHELF PC PLAIN	EA	WIRE	P	10562	$1,497.66	$0.1418
872289	EVAP PLATE BLANK	EA	COOL	P	6392	$2,107.78	$0.3298
872467	GROMMET COMPRESSOR MNTG	EA	MISC	P	740398	$10,025.00	$0.0135
872470	TERMINAL PHASE CONTROL BOX	EA	MISC	P	98219	$3,716.46	$0.0378
872491	WIRE STIFFENER LINER DOOR PC	EA	MISC	P	29759	$1,537.64	$0.0517
872505	EVAP TUBE TOP & SIDES F310	EA	TUBE	P	8277	$1,354.91	$0.1637
872511	EVAP TUBE TOP & SIDES F160	EA	TUBE	P	4216	$1,309.79	$0.3107
872512	EVAP TUBE TOP & SIDES F230	EA	TUBE	P	5005	$1,536.96	$0.3071
872513	EVAP TUBE BACK & BOTTOM F310	EA	TUBE	P	8277	$1,321.87	$0.1597
872514	EVAP TUBE BACK & BOTTOM F230	EA	TUBE	P	5005	$1,321.87	$0.2641
872515	EVAP TUBE BACK & BOTTOM F160	EA	TUBE	P	4216	$1,321.87	$0.3135
872516	EVAP TUBE BACK & BTTM C410B	EA	TUBE	P	7695	$1,321.87	$0.1718
872517	EVAP TUBE BACK & BOTTOM C380B	EA	MISC	P	14513	$823.84	$0.0568
872521	HARNESS EARTH FAN MOTOR	EA	HARN	P	39570	$2,670.02	$0.0675
872526	FAN MOTOR BARE 230V	EA	MIMP	P	29945	$1,994.72	$0.0666
872560	CONTROL RANCO K59 L6024-0	EA	CONT	P	24518	$5,016.30	$0.2046
872580	DUCT DRAIN 940MM	EA	PLAS	P	10606	$1,827.48	$0.1723
872587	BOOKLET 'USE & CARE' VF F&P	EA	DOCU	P	19887	$1,998.67	$0.1005
872597	EVAP TUBE BACK & BTTM C240B	EA	TUBE	P	10606	$1,498.67	$0.1413
872599	BOOKLET 'USE & CARE' VF	EA	DOCU	P	2475	$1,947.52	$0.7869
872629	BASKET FC BTTM WIDE K,F CYCLIC	EA	WIRE	P	49996	$5,780.12	$0.1156
872632	BASKET FC DOOR PLAIN	EA	WIRE	P	37933	$2,213.65	$0.0584
872634	SPACER CONDENSER	EA	MISC	P	324674	$4,481.23	$0.0138
872636	GASKET EVAP COVER 1235+5-0 N/F	EA	GASK	P	33947	$13,495.92	$0.3976
872766	EVAP TUBE TOP & SIDES C410B	EA	TUBE	P	7695	$1,321.87	$0.1718
872767	EVAP TUBE TOP & SIDES C380B	EA	TUBE	P	14513	$1,573.18	$0.1084
872768	EVAP TUBE TOP & SIDES C240B	EA	TUBE	P	10606	$1,588.12	$0.1497
872854	LABEL LOAD LIMIT C380,410B	EA	LABL	P	22208	$836.95	$0.0377
872858	BAR COMMOMING 110V AMP LOK 60014-1	EA	MISC	P	1525	$565.66	$0.3709
872862	TERMINAL UTILUX 6.3MM Q.C. H942A	EA	TERM	P	5451	$11,807.75	$2.1662
872864	PIN MATE-N-LOK AMP 1-480351-0	EA	MISC	P	1817	$1,227.41	$0.6755
872865	HEATER CROSSRAIL 110V 'H' MODELS	EA	MISC	P	562	$565.66	$1.0065
872867	PLUG MATE-N-LOK AMP 1-480349-0	EA	MISC	P	1817	$821.44	$0.4521
872868	HEATER DEFROST F/F COIL 230V	EA	MISC	P	38045	$3,393.75	$0.0892
872869	HEATER DEFROST F/F COIL 110V	EA	MISC	P	1525	$778.17	$0.5103
872893	HARNESS VF CONTROL	EA	HARN	P	37428	$2,082.39	$0.0556
872896	PLUG 6WAY 110V AMP 1-480262-0	EA	MISC	P	1525	$616.82	$0.4045
872901	CAP 6WAY 110V AMP 1-480263-0	EA	MISC	P	1525	$565.66	$0.3709
872906	HARNESS CON BOX-TERM BOX 110V(2110)	EA	HARN	P	282	$853.75	$3.0275
872908	HARNESS CON BOX-TERM BOX 110V(1690)	EA	HARN	P	1424	$647.83	$0.4549
872909	HARNESS CON BOX-TERM BOX 110V(1550)	EA	HARN	P	111	$647.83	$5.8363
872991	LABEL BLANK SERIAL PLATE	EA	LABL	P	41095	$478.85	$0.0117
872992	LABEL CARTON TAG & PROCESS CARD	EA	LABL	P	203314	$7,371.49	$0.0363
873002	SEALANT FOAM TAPE 50X4X15MM EVA30	EA	TAPE	P	1298696	$15,385.69	$0.0118
873003	SEALANT FOAM TAPE 40X4X20MM EVA30	EA	TAPE	P	324674	$4,349.32	$0.0134
873008	PIN 'H'	EA	MISC	P	11545	$1,110.37	$0.0962

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	TOTAL COSTS	COST PER UNIT
873018	SWITCH BUTTER COMP. 11604-22E	EA	MIMP	P	66509	$2,738.03	$0.0412
873028	HEATER BUTTER COMP 230V	EA	MIMP	P	66509	$3,778.37	$0.0568
873042	LABEL ENERGY RATING CC365H	EA	LABL	P	909	$530.01	$0.5831
873059	LEAFLET WARRANTY SHACK LOCAL	EA	DOCU	P	19996	$1,998.67	$0.1000
873060	LEAFLET WARRANTY F&P EXPORT	EA	DOCU	P	20272	$1,998.67	$0.0986
873163	CAP CAPILLARY GREEN	EA	MISC	P	173710	$770.29	$0.0044
873164	CAP CAPILLARY RED	EA	MISC	P	221987	$1,179.54	$0.0053
873178	SACHET EVAP PLATE 635	EA	MISC	P	18749	$1,026.07	$0.0547
873194	LABEL BRAND IDENT 'MILANO WHITE'	EA	LABL	P	7179	$478.85	$0.0667
873196	HEATER WATER EVAP 230V	EA	MIMP	P	9322	$1,594.38	$0.1710
873197	HEATER WATER EVAP 110V	EA	MIMP	P	1525	$1,003.58	$0.6581
873204	SHELF HALF FRONT PLAIN	EA	WIRE	P	98596	$2,164.30	$0.0220
873206	SHELF HALF REAR PLAIN	EA	WIRE	P	98596	$2,161.43	$0.0219
873253	CONTROL DEFROST TIMER 230V N/F	EA	MIMP	P	39645	$2,459.90	$0.0620
873254	CONTROL DEFROST TIMER 110V EXP	EA	MIMP	P	1525	$952.42	$0.6245
873268	CONTROL RANCO K59 L6027-0	EA	CONT	P	107242	$10,726.40	$0.1000
873282	CABLE SUPPLY 220/230V EUROPE	EA	MIMP	P	365	$952.42	$2.6094
873291	HEATER DEFROST 230V	EA	MIMP	P	80434	$4,162.86	$0.0518
873292	HEATER DEFROST 110V	EA	MIMP	P	1778	$952.42	$0.5357
873293	LEAFLET STORAGE RECORD FC GRAPHITE	EA	LABL	P	121927	$683.48	$0.0056
873309	LEALFET BUTTER COMPT	EA	DOCU	P	66509	$3,328.75	$0.0500
873311	LABEL GALAXY ENERGY AWARD	EA	LABL	P	988	$478.85	$0.4847
873323	HARNESS F/F 230V N395B	EA	HARN	P	21078	$2,894.46	$0.1373
873324	HARNESS F/F 230V N405T/N400H	EA	HARN	P	9919	$1,341.70	$0.1353
873325	HARNESS F/F 230V N375T	EA	HARN	P	7048	$1,331.16	$0.1889
873327	HARNESS F/F 110V N405T,400H,375T	EA	HARN	P	1424	$809.18	$0.5682
873329	HARNES F/F 110V N395B	EA	HARN	P	101	$779.66	$7.7194
873380	EVAP PLATE BLANK C380B	EA	COOL	P	55733	$3,141.97	$0.0564
873381	EVAP PLATE BLANK C390T	EA	COOL	P	12781	$2,137.96	$0.1673
873382	EVAP BLANK C420T	EA	COOL	P	13961	$1,978.95	$0.1417
873383	EVAP BLANK C370	EA	COOL	P	12406	$2,296.95	$0.1851
873387	LABEL BRAND IDENT F&P(INT COL)V812	EA	LABL	P	53820	$1,581.13	$0.0294
873414	SHELF PC 635 PLAIN	EA	WIRE	P	200873	$7,378.38	$0.0367
873418	PACKER DOOR 'T' AWARD MODELS	EA	CART	P	38462	$1,119.03	$0.0291
873419	LABEL SALES INFORM P120	EA	LABL	P	4865	$581.16	$0.1195
873420	LABEL SALES INFORM C170T	EA	LABL	P	11484	$1,059.18	$0.0922
873421	LABEL SALES INFORM C190	EA	LABL	P	5306	$581.16	$0.1095
873422	LABEL SALES INFORM P190	EA	LABL	P	327	$478.85	$1.4644
873423	LABEL SALES INFORM C240B	EA	LABL	P	10606	$785.79	$0.0741
873424	LABEL SALES INFORM C250T	EA	LABL	P	6644	$632.32	$0.0952
873425	LABEL SALES INFORM C270	EA	LABL	P	5171	$632.32	$0.1223
873426	LABEL SALES INFORM C335T	EA	LABL	P	10420	$1,059.18	$0.1016
873427	LABEL SALES INFORM C365H	EA	LABL	P	3029	$581.16	$0.1919
873428	LABEL SALES INFORM C370	EA	LABL	P	10233	$888.10	$0.0868
873429	LABEL SALES INFORM N375T	EA	LABL	P	7562	$683.48	$0.0904
873430	LABEL SALES INFORM C380B	EA	LABL	P	12348	$939.26	$0.0761
873431	LABEL SALES INFORM C390T	EA	LABL	P	5869	$752.24	$0.1282
873432	LABEL SALES INFORM N395B	EA	LABL	P	10621	$1,314.97	$0.1238
873433	LABEL SALES INFORM N400H	EA	LABL	P	6559	$683.48	$0.1042
873434	LABEL SALES INFORM N405T	EA	LABL	P	3539	$530.01	$0.1498
873435	LABEL SALES INFORM C410B	EA	LABL	P	7695	$683.48	$0.0888
873436	LABEL SALES INFORM C415H	EA	LABL	P	1428	$478.85	$0.3353
873437	LABEL SALES INFORM C420T	EA	LABL	P	2354	$530.01	$0.2252
873444	CABLE SUPPLY 110V SAUDI V803	EA	MISC	P	3400	$667.97	$0.1965
873452	CLIP SPRING CONDENSER TRIPLE	EA	FAST	P	9195	$1,157.35	$0.1259
873453	CLIP SPRING CONDENSER DOUBLE	EA	FAST	P	272244	$3,878.30	$0.0142
873491	BEARING DOOR END CAP WH/WH	EA	PLAS	P	156468	$1,984.43	$0.0127
873522	BRACKET HINGE CENTRE CROSS RAIL WW	EA	MMET	P	23044	$9,832.37	$0.4267
873524	LABEL NZ PRINCE PHIL AWARD SMALL	EA	LABL	P	95625	$2,269.33	$0.0237
873564	TUBE TAIL ASSY 635	EA	SYST	P	244652	$4,606.47	$0.0188
873621	BRACKET HINGE CENTRE 'H' WHITE	EA	MMET	P	5290	$9,109.39	$1.7220
873794	BEARING DOOR END CAP OYSTER	EA	PLAS	P	379251	$4,267.93	$0.0113
873814	PLUG TAPPED HOLE SANDSTONE	EA	PLAS	P	32892	$1,259.22	$0.0383
873815	TRIM CORNER S'STONE	EA	PLAS	P	10964	$1,208.06	$0.1102
873846	LABEL COLOUR CTN - S,STONE	EA	LABL	P	10964	$581.16	$0.0530
873851	BRACKET HINGE CROSS OYSTER	EA	MMET	P	167454	$14,463.16	$0.0864
873996	HEATER TROPICAL 110V	EA	MISC	P	1424	$565.66	$0.3972
873997	HEATER TROPICAL 230V	EA	MISC	P	4931	$1,033.95	$0.2097
874059	BRACKET HINGE CROSS 'H' OYST	EA	MMET	P	17800	$9,933.42	$0.5581
874069	NAMEPLATE INSERT SHACK OYST S/DR	EA	LABL	P	17150	$20,659.47	$1.2046
874075	NAMEPLATE INSERT SHACK OYST S/DR EX	EA	LABL	P	13960	$632.32	$0.0453
874077	NAMEPLATE INSERT SHACK WH S/DR EX	EA	LABL	P	442	$478.85	$1.0834
874081	NAMEPLATE INSERT FRIG WH S/DR	EA	LABL	P	451	$701.09	$1.5545
874087	LABEL ENERGY RATING LOCAL C365H	EA	LABL	P	2077	$478.85	$0.2305
874088	LABEL ENERGY RATING LOCAL N400H	EA	LABL	P	2455	$530.01	$0.2159
874090	LABEL ENERGY RATING LOCAL C190	EA	LABL	P	4392	$581.16	$0.1323
874091	LABEL ENERGY RATING LOCAL C270	EA	LABL	P	2792	$530.01	$0.1898
874092	LABEL ENERGY RATING LOCAL C170T	EA	LABL	P	7474	$734.63	$0.0983
874093	LABEL ENERGY RATING LOCAL C250T	EA	LABL	P	2301	$530.01	$0.2303
874094	LABEL ENERGY RATING LOCAL C240B	EA	LABL	P	8150	$683.48	$0.0839
874095	LABEL ENERGY RATING LOCAL N395B	EA	LABL	P	8203	$1,047.11	$0.1276
874096	LABEL ENERGY RATING LOCAL F160	EA	LABL	P	2974	$632.32	$0.2126
874097	LABEL ENERGY RATING LOCAL F230	EA	LABL	P	2970	$581.16	$0.1957
874098	LABEL ENERGY RATING LOCAL H701	EA	LABL	P	626	$478.85	$0.7649
874099	LABEL ENERGY RATING LOCAL C370	EA	LABL	P	7209	$842.49	$0.1169
874100	LABEL ENERGY RATING LOCAL C335T	EA	LABL	P	6145	$683.48	$0.1112
874101	LABEL ENERGY RATING LOCAL C390T	EA	LABL	P	2422	$637.86	$0.2634
874103	LABEL ENERGY RATING LOCAL C380B	EA	LABL	P	11955	$734.63	$0.0614
874104	LABEL ENERGY RATING LOCAL C410B	EA	LABL	P	3498	$530.01	$0.1515
874105	LABEL ENERGY RATING LOCAL H160	EA	LABL	P	3220	$752.24	$0.2336
874106	LABEL ENERGY RATING LOCAL H220	EA	LABL	P	3707	$651.59	$0.1758
874107	LABEL ENERGY RATING LOCAL H360	EA	LABL	P	3952	$689.02	$0.1743
874108	LABEL ENERGY RATING LOCAL H510	EA	LABL	P	1078	$689.02	$0.6392
874110	LABEL ENERGY RATING LOCAL F310	EA	LABL	P	4883	$683.48	$0.1400

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	TOTAL COSTS	COST PER UNIT
874111	LABEL ENERGY RATING LOCAL C120	EA	LABL	P	83	$478.85	$5.7693
874112	LABEL ENERGY RATING LOCAL P120	EA	LABL	P	4317	$581.16	$0.1346
874117	LABEL ENERGY RATING LOCAL N375T	EA	LABL	P	2449	$530.01	$0.2164
874118	LABEL ENERGY RATING LOCAL N405T	EA	LABL	P	1963	$530.01	$0.2700
874121	LABEL FREEZER GUIDE 'B' 635	EA	LABL	P	23907	$2,713.59	$0.1135
874122	LABEL FREEZER GUIDE 'T' 635	EA	LABL	P	33675	$1,655.45	$0.0492
874123	LABEL FREEZER GUIDE COMPACT	EA	LABL	P	37955	$1,793.78	$0.0473
874124	LABEL WIRING DIA F/F	EA	LABL	P	39469	$1,171.88	$0.0297
874250	EVAP F/F N308(FIN ON TUBE)	EA	COOL	P	1216	$1,978.95	$1.6274
874251	COVER COIL NF308	EA	MIMP	P	1216	$707.96	$0.5822
874254	HARNESS WIRING F/F N308F	EA	HARN	P	1216	$403.37	$0.3317
874257	GASKET EVAP COVER N/F N308	EA	GASK	P	1216	$11,563.29	$9.5093
874265	BOOKLET 'USE & CARE OF RF'S'	EA	DOCU	P	35017	$2,100.99	$0.0600
874266	BOOKLET 'USE & CARE OF RF'S' F&P	EA	DOCU	P	101434	$5,510.55	$0.0543
874275	HEATER DEFROST 230V C370	EA	MIMP	P	13259	$1,547.18	$0.1167
874276	HEATER DEFROST 110V C370	EA	MIMP	P	39	$952.42	$24.4210
874278	COVER EVAP ASSY N/FROST UNPAINTED	EA	PNTP	P	5623	$17,543.81	$3.1200
874281	EVAP COIL N369B	EA	MIMP	P	5623	$1,884.56	$0.3352
874284	TUBE EVAP BACK & BTTM 635 T	EA	TUBE	P	20071	$1,681.82	$0.0838
874285	TUBE EVAP BACK & BTTM 525 T	EA	TUBE	P	18128	$1,519.94	$0.0838
874288	FAN MOTOR UNTERMINATED 230V	EA	MIMP	P	1216	$952.42	$0.7832
874329	HARNESS LEAD EARTH	EA	HARN	P	12947	$970.32	$0.0749
874331	DUCT DRAIN 327MM N375T	EA	PLAS	P	7562	$1,460.18	$0.1931
874332	DUCT DRAIN 367MM N400H,N405T	EA	PLAS	P	10829	$1,463.84	$0.1352
874333	DUCT DRAIN 450MM C390T,N375T	EA	PLAS	P	13431	$1,719.63	$0.1280
874334	DUCT DRAIN 520MM C415H,C420T,N/F	EA	PLAS	P	14611	$1,566.16	$0.1072
874335	DUCT DRAIN 965MM C380B,N369B	EA	PLAS	P	20136	$2,255.13	$0.1120
874336	DUCT DRAIN 1065MM C410B,N395B	EA	PLAS	P	23251	$2,446.88	$0.1052
874337	RETAINER CABLE HF V810	EA	MISC	P	12947	$923.76	$0.0713
874338	TERMINAL 3WAY	EA	MISC	P	673567	$7,463.61	$0.0111
874339	LABEL ENERGY RATING F&PN369B V812	EA	LABL	P	1553	$581.16	$0.3742
874348	NAMEPLATE INSERT FRIG OY SD LOC	EA	LABL	P	400	$234.39	$0.5860
874349	DUCT DRAIN PC 345MM C335T,C229	EA	MISC	P	14161	$1,230.70	$0.0869
874350	NAMEPLATE INSERT LEON OYST S/DR	EA	LABL	P	424	$530.01	$1.2500
874351	NAMEPLATE INSERT KELV OYST S/DR EX	EA	LABL	P	2838	$632.32	$0.2228
874353	NAMEPLATE INSERT KELV OY SD LOC	EA	LABL	P	23080	$821.00	$0.0356
874354	NAMEPLATE INSERT F&P OYST S/DR	EA	LABL	P	20962	$2,093.38	$0.0999
874355	NAMEPLATE INSERT SHACK OYST S/DR FF	EA	LABL	P	509	$478.85	$0.9408
874357	NAMEPLATE INSERT SHACK OY SD FF EX	EA	LABL	P	1434	$478.85	$0.3339
874363	NAMEPLATE INSERT FRIG OY S/D FF LOC	EA	LABL	P	130	$234.39	$1.8030
874370	NAMEPLATE INSERT F&P OY S/DR FF EXP	EA	LABL	P	120	$234.39	$1.9533
874371	NAMEPLATE INSERT F&P WH S/DR	EA	LABL	P	1308	$530.01	$0.4052
874375	NAMEPLATE INSERT SHACK WH X-R EX	EA	LABL	P	1453	$478.85	$0.3296
874377	NAMEPLATE INSERT FRIG WH X-R EX	EA	LABL	P	696	$530.01	$0.7615
874380	NAMEPLATE INSERT FRIG OY XR LOC	EA	LABL	P	472	$234.39	$0.4966
874381	DUCT DRAIN PC 470MM C370,365H	EA	MISC	P	13298	$1,179.54	$0.0887
874382	NAMEPLATE INSERT KELV OYST X-R EX	EA	LABL	P	6858	$530.01	$0.0773
874384	NAMEPLATE INSERT KELV OY XR LOC	EA	LABL	P	21084	$234.39	$0.0111
874385	NAMEPLATE INSERT F&P OYST X-R	EA	LABL	P	19073	$1,149.43	$0.0603
874386	NAMEPLATE INSERT F&P WH X-R EX	EA	LABL	P	2509	$530.01	$0.2112
874390	NAMEPLATE INSERT SHACK WH X-R FF EX	EA	LABL	P	1060	$478.85	$0.4517
874391	NAMEPLATE INSERT FRIG OYST XR FF EX	EA	LABL	P	50	$530.01	$10.6002
874394	NAMEPLATE INSERT FRIG WH XR FF LOC	EA	LABL	P	3862	$234.39	$0.0607
874395	NAMEPLATE INSERT FRIG OY XR FF LOC	EA	LABL	P	233	$234.39	$1.0060
874397	NAMEPLATE INSERT KELV OY X-R FF EX	EA	LABL	P	4608	$530.01	$0.1150
874399	NAMEPLATE INSERT KELV OY XR FF LOC	EA	LABL	P	6652	$234.39	$0.0352
874409	NAMEPLATE INSERT F&P OY X-R FF LOC	EA	LABL	P	9258	$734.63	$0.0794
874410	NAMEPLATE INSERT F&P WH X-R FF	EA	LABL	P	6811	$956.87	$0.1405
874456	TUBE EVAP TOP & SIDES 635 T	EA	TUBE	P	20071	$2,104.89	$0.1049
874459	TUBE EVAP TOP & SIDES 525 T	EA	TUBE	P	18128	$1,698.84	$0.0937
874479	LEAFLET 'AUTHORISED C/S'S' AUST	EA	DOCU	P	54080	$2,356.77	$0.0436
874480	LEAFLET WARRANTY F&P AUST(V812)	EA	DOCU	P	46259	$2,265.78	$0.0490
874481	LEAFLET WARRANTY LOCAL	EA	DOCU	P	92920	$4,468.22	$0.0481
874488	HEATER DEFROST 230V N308F	EA	MISC	P	1216	$321.20	$0.2641
874497	CLIP THERMAL MASS GREY	EA	MISC	P	95497	$2,151.52	$0.0225
874498	LABEL ENERGY RATING LOCAL C229	EA	LABL	P	3741	$637.86	$0.1705
874501	LABEL SALES INFORM C229	EA	LABL	P	3741	$683.48	$0.1827
874506	DUCT HARNESS FC 385MM N369B	EA	MISC	P	5623	$980.45	$0.1744
874509	BASKET FC BTTM F/F WIDE K,FN369B	EA	WIRE	P	7044	$2,026.61	$0.2877
874510	HARNESS FEEDER CABLE 4 CORE	EA	HARN	P	6644	$1,417.85	$0.2134
874511	HARNESS FEEDER CABLE 4 CORE	EA	HARN	P	10606	$1,550.62	$0.1462
874512	HARNESS FEEDER CABLE 4 CORE	EA	HARN	P	5171	$1,160.14	$0.2244
874513	HARNESS FEEDER CABLE 4 CORE	EA	HARN	P	22314	$1,526.47	$0.0684
874514	HEATER DEFROST 220/250V	EA	MIMP	P	39269	$1,817.07	$0.0463
874515	HEATER DEFROST 110/115V	EA	MIMP	P	185	$996.75	$5.3878
874525	LABEL SALES INFORM N369B	EA	LABL	P	5896	$956.87	$0.1623
874526	LABEL ENERGY RATING N369B	EA	LABL	P	4070	$734.63	$0.1805
874527	GASKET EVAP COVER N/F N369B	EA	GASK	P	5623	$11,904.71	$2.1171
874648	CONTROL DEFROST TIMER 230V 8HR	EA	MIMP	P	1216	$707.96	$0.5822
874653	LABEL ENERGY RATING N308 LOC	EA	LABL	P	1216	$234.39	$0.1928
874701	NAMEPLATE INSERT FRIG WH XR LOC	EA	LABL	P	12512	$234.39	$0.0187
874702	NAMEPLATE INSERT FRIG WH SD LOC	EA	LABL	P	13845	$234.39	$0.0169
874703	LABEL ENERGY RATING F&PP120	EA	LABL	P	182	$649.93	$3.5710
874704	LABEL ENERGY RATING F&PP190	EA	LABL	P	132	$234.39	$1.7757
874706	LABEL ENERGY RATING F&PC190	EA	LABL	P	657	$234.39	$0.3568
874707	LABEL ENERGY RATING F&PC270	EA	LABL	P	2217	$234.39	$0.1057
874708	LABEL ENERGY RATING F&PC170T	EA	LABL	P	1146	$234.39	$0.2045
874709	LABEL ENERGY RATING F&PC250T	EA	LABL	P	2069	$234.39	$0.1133
874710	LABEL ENERGY RATING F&PC240B	EA	LABL	P	2300	$234.39	$0.1019
874711	LABEL ENERGY RATING F&PC370	EA	LABL	P	2935	$478.85	$0.1632
874712	LABEL ENERGY RATING F&PC335T	EA	LABL	P	1971	$234.39	$0.1189
874713	LABEL ENERGY RATING F&PC390T	EA	LABL	P	2732	$234.39	$0.0858
874714	LABEL ENERGY RATING F&PC420T	EA	LABL	P	2195	$478.85	$0.2182
874715	LABEL ENERGY RATING F&PC415H	EA	LABL	P	1428	$234.39	$0.1641

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	TOTAL COSTS	COST PER UNIT
874716	LABEL ENERGY RATING F&PC380B	EA	LABL	P	1978	$478.85	$0.2421
874717	LABEL ENERGY RATING F&PC410B	EA	LABL	P	3808	$234.39	$0.0616
874718	LABEL ENERGY RATING F&PN375T	EA	LABL	P	2477	$234.39	$0.0946
874719	LABEL ENERGY RATING F&PN405T	EA	LABL	P	1989	$234.39	$0.1178
874720	LABEL ENERGY RATING F&PN400H	EA	LABL	P	1034	$234.39	$0.2267
874721	LABEL ENERGY RATING F&PN395B	EA	LABL	P	6269	$234.39	$0.0374
874722	LABEL ENERGY RATING F&PF160	EA	LABL	P	890	$234.39	$0.2634
874723	LABEL ENERGY RATING F&PF230	EA	LABL	P	1878	$234.39	$0.1248
874724	LABEL ENERGY RATING F&PF310	EA	LABL	P	2633	$645.58	$0.2452
874725	LABEL ENERGY RATING F&PH160	EA	LABL	P	4001	$1,200.58	$0.3001
874726	LABEL ENERGY RATING F&PH220	EA	LABL	P	2408	$234.39	$0.0973
874727	LABEL ENERGY RATING F&PH360	EA	LABL	P	2140	$234.39	$0.1095
874728	LABEL ENERGY RATING F&PH510	EA	LABL	P	536	$234.39	$0.4373
874729	LABEL ENERGY RATING F&PH701	EA	LABL	P	452	$234.39	$0.5186
874733	GROMMET HARNESS FAN MOTOR	EA	MISC	P	1216	$321.20	$0.2641
874740	BASKET FC BTTM F/F WIDE SN369B,308	EA	WIRE	P	68	$963.60	$14.1706
876230	BASKET FC BTTM WIDE SHACK CYCLIC	EA	WIRE	P	6524	$1,353.73	$0.2075
900081	BAG POLY 250MMX550MMX30MU	EA	MISC	P	5281	$616.82	$0.1168
900084	LABEL BAR-CODE	EA	LABL	P	41095	$632.32	$0.0154
900230	UNIVERSAL 3WAY CAP AMP 1-480701-0	EA	MISC	P	39570	$1,653.09	$0.0418
900231	UNIVERSAL 1WAY PLUG AMP 1-350867-0	EA	MISC	P	39570	$872.60	$0.0221
900232	UNIVERSAL 1WAY CAP AMP 1-350868-0	EA	MISC	P	39570	$821.44	$0.0208
900299	UNIVERSAL 3WAY PLUG AMP 1-480700-0	EA	MISC	P	39570	$1,772.00	$0.0448
900310	TAPE 12.7MM SCOTCH 969 16.5M	RL	TAPE	P	758	$1,585.70	$2.0920
900376	SCREW #4X12MM AB MUSH PH ST ZP	EA	FAST	P	123285	$3,555.86	$0.0288
900377	SCREW #8X32X9.5 TY T PAN PH ZP	EA	FAST	P	27066	$1,924.70	$0.0711
900382	SCREW #8X3/8 AB PAN PHIL ST ZP	EA	FAST	P	79140	$2,431.51	$0.0307
900396	SPACER FOAM BARRIER PEF ROD(300MT)	MT	MISC	P	26603	$923.76	$0.0347
900403	TAPE FOAM 5420 3X9MM(25M)	RL	TAPE	P	32	$1,534.55	$47.9547
900406	TAPE 100MM DANCO D/S 959(50M)	RL	TAPE	P	1978	$2,030.03	$1.0263
900407	HOT MELT FULAMELT HM8678(20KG BAG)	KG	MISC	P	20697	$4,537.32	$0.2192
900413	TAPE FOIL 1200 0 (8KGPERROLL)	KG	TAPE	P	310	$1,483.39	$4.7851
900414	HOT MELT GLUE KONISHI MU342	KG	MISC	P	1062	$565.66	$0.5326
900417	SPACER FOAMED	EA	MISC	P	246570	$4,498.54	$0.0182
900419	BAG POLY MINIGRIP 130X180MM	EA	MISC	P	162337	$1,435.32	$0.0088
900420	PLUG FOAM 80X80X10MM	EA	MISC	P	33736	$1,190.60	$0.0353
900426	TAPE 48MM VINYL 1503(100MT)	RL	TAPE	P	593	$1,973.56	$3.3281
900438	O-RING 5mmI/DX10mmO/D	EA	FAST	P	18782	$1,464.29	$0.0780
900439	LABEL SILVER 115X100M PA-T18LKYBLUE	RL	LABL	P	97	$785.79	$8.1009
900440	LABEL FILM 115X100M NPL8KLYBLE	RL	LABL	P	97	$836.95	$8.6284
900441	LABEL CARBON 110X330M	RL	LABL	P	32	$530.01	$16.5628
900444	SCREW #6X19.04 PAN WASH S/T TWR	EA	FAST	P	82190	$1,208.51	$0.0147
900449	BAG POLY 100X300MM	EA	MISC	P	10176	$565.66	$0.0556
900450	TIE CABLE 7" BARLOCK	EA	FAST	P	37	$1,157.35	$31.2797
900452	TAPE 96MM ALUM SCOTCH 425(55M)	RL	TAPE	P	732	$1,892.64	$2.5856
900455	TAPE VENTING 25MM(50M)	RL	TAPE	P	789	$1,636.86	$2.0746
900456	SCREW #8X20 TY17 PAN PHIL ST ZP	EA	FAST	P	35346	$1,413.13	$0.0400
900460	TAPE 24MM VINYL 1503 CLEAR (100MT)	RL	TAPE	P	2620	$3,790.28	$1.4467
900461	SILAFLEX R(RTV) COMPOUND 20LT PAILS	LT	MISC	P	565	$616.82	$1.0917
900465	TAPE 12MM D/S FOAM 4085(18MT)	RL	TAPE	P	742	$3,177.76	$4.2827
900466	TAPE 12MM VINYL 6204 (66MT)	RL	TAPE	P	2097	$1,994.96	$0.9513
900468	TERMINAL INSULATION BLOCK 4.8MM	EA	MISC	P	16238	$616.82	$0.0380
900473	TAPE 38MM ALUMINIUM (300MT)	RL	TAPE	P	1610	$2,634.42	$1.6363
900475	SCREW #8X16.4MM SP PAN NIB ST ZP	EA	FAST	P	718618	$8,119.54	$0.0113
900496	SCREW #10X32X12 TYPE1 PAN PH STZP	EA	FAST	P	558198	$3,411.59	$0.0061
900500	SCREW #8X32MM PAN PH ZP	EA	FAST	P	57468	$1,310.82	$0.0228
900501	ADHESIVE HM METRON 709 25.4 STICKS	KG	MISC	P	1328	$5,456.20	$4.1086
900511	ADHESIVE FULLER HM 8689	KG	MISC	P	97	$616.82	$6.3590
900656	EXTRUSION TRIM BASE PANEL	EA	EXTR	P	82190	$36,587.65	$0.4452
900746	LABEL CFC	EA	LABL	P	197537	$8,702.89	$0.0441
901001	PLUG-TAPPED HOLE-WHITE	EA	PLAS	P	919990	$9,192.67	$0.0100
904001	PLUG TAPPED HOLE F/AVACADO	EA	PLAS	P	5148	$2,504.68	$0.4865
904130	LABEL COLOUR CTN FA	EA	LABL	P	1716	$478.85	$0.2791
905001	PLUG TAPPED HOLE ALMOND	EA	PLAS	P	14934	$1,259.22	$0.0843
905130	LABEL COLOUR CTN AL	EA	LABL	P	4978	$478.85	$0.0962
907001	CARTON OUTER HF160	EA	CART	P	7457	$3,565.07	$0.4781
907002	CARTON OUTER HF220	EA	CART	P	11436	$2,228.84	$0.1949
907003	CARTON OUTER HF360	EA	CART	P	9829	$2,222.80	$0.2261
907004	CARTON OUTER HF510	EA	CART	P	3806	$1,936.37	$0.5088
907005	CARTON OUTER HF701	EA	CART	P	3553	$2,127.32	$0.5987
907006	CARTON OUTER HF170 SHARP	EA	CART	P	513	$1,119.03	$2.1813
907007	CARTON OUTER HF220 SHARP	EA	CART	P	4010	$1,458.98	$0.3638
907008	CARTON OUTER HF360 SHARP	EA	CART	P	491	$1,309.98	$2.6680
907011	CARTON INNER HF160	EA	CART	P	7970	$3,373.31	$0.4233
907012	CARTON INNER HF220	EA	CART	P	15446	$2,413.75	$0.1563
907013	CARTON INNER HF360	EA	CART	P	10320	$2,324.31	$0.2252
907014	CARTON INNER HF510	EA	CART	P	3806	$1,936.37	$0.5088
907015	CARTON INNER HF701	EA	CART	P	3553	$2,031.84	$0.5719
907049	CARTON BASE BOARD H510	EA	CART	P	4000	$1,475.30	$0.3688
907050	CARTON BASE BOARD H701	EA	CART	P	3500	$1,363.49	$0.3896
907130	CARTON BASE SML 635	EA	CART	P	33211	$3,872.85	$0.1166
907131	CARTON BASE MID 635	EA	CART	P	33163	$3,668.08	$0.1106
907132	CARTON BASE LGE 635	EA	CART	P	37862	$3,553.00	$0.0938
907135	CARTON SLEEVE SML 635	EA	CART	P	33211	$3,555.65	$0.1071
907136	CARTON SLEEVE MID 635	EA	CART	P	33163	$3,654.00	$0.1102
907137	CARTON SLEEVE LGE 635	EA	CART	P	37862	$3,543.58	$0.0936
907140	CARTON RF C229	EA	CART	P	3741	$2,102.71	$0.5621
907151	CARTON LINER RF C229	EA	CART	P	7482	$1,821.51	$0.2435
					42,087,286	$1,554,755.99	

PART NUMBER	DESCRIPTION	UNT OF MES	COMM CODE	SRC CDE	FCAST USAGE	PURCH 4 COST	STORE 1 COST	STORE 2 ---¶ COST	TRX	STORE 4 --¶ COST	TRX	ADMIN 1 COST	PURCH 3 COST	STORE 3 COST	STORE 5 COST	STORE 3&5TRX	PLASTICS --¶ COST	TRX	TOTAL COSTS
12254	C/KELV C370 G WHWH V802	EA	CAXP	P	275			$0.00				$0.00	$0.00	$0.00	$0.00				$0.00
12492	C/FRIG C370 G WHWH V803	EA	CAXP	P	18			$0.00				$0.00	$0.00	$0.00	$0.00				$0.00
12942	C/FRIG C390T G ALAL V803	EA	CAXP	P	77			$0.00				$0.00	$0.00	$0.00	$0.00				$0.00
203468	WASHER 304 S/S 4.3 I.DX11 O	EA	FAST	P	179242	$38.29	$2,426.41	$409.25	8			$768.54	$144.35	$98.23	$146.23	1			$4,031.30
209534	RELAY FN77F13 MM5-92C 100V	EA	EXP	P	37			$0.00				$521.51	$97.95	$98.23	$146.23	1			$863.92
209535	OVERLOAD FN77F13 MM3-46X 10	EA	EXP	P	37			$0.00				$521.51	$97.95	$0.00	$0.00				$619.46
209605	COVER PROTECTOR-NATIONAL(LR	EA	EXP	P	37			$0.00				$521.51	$97.95	$98.23	$146.23	1			$863.92
209606	CLAMP PROTECTOR COVER	EA	EXP	P	37			$0.00				$521.51	$97.95	$98.23	$146.23	1			$863.92
209607	CLIP OVERLOAD NA	EA	EXP	P	37			$0.00				$521.51	$97.95	$98.23	$146.23	1			$863.92
209608	COVER CAPACITOR (SMALL)	EA	EXP	P	37			$0.00				$521.51	$97.95	$0.00	$0.00				$619.46
209802	RELAY P.T.C. S&Q SERIES 220	EA	EXP	P	181811	$191.43	$1,892.60	$2,608.99	51			$521.51	$97.95	$98.23	$146.23	1			$5,556.94
209806	RELAY P.T.C 'S' 'Q' SERIES	EA	EXP	P	3166	$38.29	$48.53	$51.16	1			$521.51	$97.95	$98.23	$146.23	1			$1,001.90
209817	OVERLOAD FN40R80R 220/240V5	EA	EXP	P	106			$0.00				$521.51	$97.95	$98.23	$146.23	1			$863.92
209821	OVERLOAD FN50R10R 220/240V5	EA	EXP	P	2313			$51.16	1			$521.51	$97.95	$98.23	$146.23	1			$915.08
209823	OVERLOAD FN50R 115V 60HZ	EA	EXP	P	179			$0.00				$521.51	$97.95	$98.23	$146.23	1			$863.92
209826	RELAY FN50R/FN60R 115V 60HZ	EA	EXP	P	294			$0.00				$521.51	$97.95	$98.23	$146.23	1			$863.92
209833	OVERLOAD FN60R12R 220/240V5	EA	EXP	P	2184			$51.16	1			$521.51	$97.95	$98.23	$146.23	1			$915.08
209834	RELAY FN40R/50R/60R 220/240	EA	EXP	P	4603			$358.10	7			$521.51	$97.95	$98.23	$146.23	1			$1,222.02
209840	OVERLOAD FN60R12T 115V 60HZ	EA	EXP	P	115			$0.00				$521.51	$97.95	$98.23	$146.23	1			$863.92
209848	COVER COMPRESSOR PROTECTOR	EA	EXP	P	80132	$153.15	$813.52	$1,432.39	28			$521.51	$97.95	$98.23	$146.23	1			$3,262.98
209849	COVER COMPRESSOR PROTECTOR	EA	EXP	P	9861	$38.29	$24.51	$255.78	5			$521.51	$97.95	$98.23	$146.23	1			$1,182.50
209850	SCREW COMPRESSOR COVER S SE	EA	EXP	P	80132	$153.15	$813.52	$716.19	14			$521.51	$97.95	$98.23	$146.23	1			$2,546.78
209851	CLIP COMPRESSOR COVER ROTAR	EA	EXP	P	9861	$38.29	$24.51	$511.57	10			$521.51	$97.95	$98.23	$146.23	1			$1,438.29
209852	BRACKET CENTRE MNT ROTARY	EA	EXP	P	9861	$38.29	$24.51	$511.57	10			$521.51	$97.95	$98.23	$146.23	1			$1,438.29
209853	GROMMET COMPRESSOR HOLDER R	EA	EXP	P	9861	$38.29	$24.51	$306.94	6			$521.51	$97.95	$98.23	$146.23	1			$1,233.66
209872	RELAY FN43S 100V50/60	EA	EXP	P	8557	$38.29	$87.40	$0.00				$521.51	$97.95	$98.23	$146.23	1			$989.61
209875	RELAY(PTC) FN40R 100V50/60	EA	EXP	P	2396			$204.63	4			$521.51	$97.95	$98.23	$146.23	1			$1,068.55
209876	OVERLOAD FN40R 100V50/60	EA	EXP	P	2396			$102.31	2			$521.51	$97.95	$98.23	$146.23	1			$966.23
209880	RELAY FN50R 100V50/60	EA	EXP	P	1269			$51.16	1			$521.51	$97.95	$98.23	$146.23	1			$915.08
209881	OVERLOAD FN50R 100V50/60	EA	EXP	P	1269			$51.16	1			$521.51	$97.95	$98.23	$146.23	1			$915.08
209883	OVERLOAD FN60R 100V50/60	EA	EXP	P	1299	$38.29	$24.51	$51.16	1			$521.51	$97.95	$98.23	$146.23	1			$977.88
209887	RELAY FN60R 100V50/60HZ	EA	EXP	P	1299	$38.29	$24.51	$204.63	4			$521.51	$97.95	$98.23	$146.23	1			$1,131.35
392175	LABEL 100VOLT 50/60 HZ	EA	LABL	P	5368	$38.29	$1,207.17	$102.31	2			$197.33	$37.06	$98.23	$146.23	1			$1,826.62
402014	LABEL 220-250V	EA	LABL	P	69046			$409.25	8			$197.33	$37.06	$98.23	$146.23	1			$888.10
402520	LABEL 100-115V	EA	LABL	P	1309			$0.00				$197.33	$37.06	$98.23	$146.23	1			$478.85
812249	CABLE SUPPLY FUJI TERMINATE	EA	HARN	P	120			$511.57	10			$339.59	$63.78	$98.23	$146.23	1			$1,159.40
814133	HARNESS LEAD CAPACITOR	EA	HARN	P	74			$0.00				$339.59	$63.78	$98.23	$146.23	1			$647.83
815198	CLIP HARNESS HF NK-5N NYLON	EA	FAST	P	23885	$76.57	$482.87	$204.63	4			$768.54	$144.35	$98.23	$146.23	1			$1,921.42
815212	LABEL REFLECTOR HF	EA	LABL	P	23885	$38.29	$362.15	$255.78	5			$197.33	$37.06	$98.23	$146.23	1			$1,135.07
815285	LABEL EARTH JAPANESE	EA	LABL	P	25743			$358.10	7			$197.33	$37.06	$98.23	$146.23	1			$836.95
815532	HARNESS LAMP HF	EA	HARN	P	23885	$459.44	$570.63	$1,688.17	33			$339.59	$63.78	$98.23	$146.23	1			$3,366.07
815537	CONTROL RANCO K54 L1866-0	EA	CONT	P	42411			$1,585.86	31			$2,920.44	$548.55	$98.23	$146.23	1			$5,299.31
815619	CABLE CAPACITOR START	EA	HARN	P	9928	$344.58	$205.22	$665.04	13			$339.59	$63.78	$98.23	$146.23	1			$1,862.67
815731	CARTON BASE PAD POLYSTYRENE	EA	CART	P	15446	$153.15	$60.36	$204.63	4			$942.08	$176.95	$0.00	$0.00				$1,537.17
815732	CARTON BASE PAD POLYSTYRENE	EA	CART	P	10320	$153.15	$72.43	$204.63	4			$942.08	$176.95	$0.00	$0.00				$1,549.24
815844	HARNESS CONTROL STANDARD HF	EA	HARN	P	40123	$191.43	$398.37	$1,432.39	28			$339.59	$63.78	$98.23	$146.23	1			$2,670.02
815845	HARNESS CONTROL ELECTO HF	EA	HARN	P	23885	$382.86	$398.73	$409.25	8			$339.59	$63.78	$98.23	$146.23	1			$1,838.67
815846	HARNESS EARTH COMPRESSOR RE	EA	HARN	P	30600	$229.72	$386.30	$1,023.13	20			$339.59	$63.78	$98.23	$146.23	1			$2,286.98
815847	HARNESS CAPACITOR ROTARY	EA	HARN	P	18793	$114.86	$193.15	$562.72	11			$339.59	$63.78	$98.23	$146.23	1			$1,518.56
815848	HARNESS EARTH CONTROL	EA	HARN	P	41095	$229.72	$543.23	$1,483.54	29			$339.59	$63.78	$98.23	$146.23	1			$2,904.32
815870	LEAFLET WARRANTY F&P EXPORT	EA	DOCU	P	7839			$0.00				$1,390.69	$261.21	$98.23	$146.23	1			$1,896.36
815925	HARNESS EARTH COMPRESSOR	EA	HARN	P	208515	$382.86	$2,178.94	$5,320.29	104			$339.59	$63.78	$98.23	$146.23	1			$8,529.92
816966	CABLE SUPPLY 230V	EA	HARN	P	187224	$536.01	$1,694.86	$3,683.28	72			$339.59	$63.78	$98.23	$146.23	1			$6,561.98

PART NUMBER	DESCRIPTION	UNT OF MES	COMM CODE	SRC CDE	FCAST USAGE	PURCH 4 COST	STORE 1 COST	STORE 2 ---¶ COST	TRX	STORE 4 --¶ COST	TRX	ADMIN 1 COST	PURCH 3 COST	STORE 3 COST	STORE 5 COST	STORE 3&5TRX	PLASTICS --¶ COST	TRX	TOTAL COSTS
817282	BOOKLET INSTR PACK ELECT FC	EA	DOCU	P	513			$0.00				$1,390.69	$261.21	$0.00	$0.00				$1,651.90
817283	BOOKLET INSTR PACK ELECT FC	EA	DOCU	P	4010			$0.00				$1,390.69	$261.21	$0.00	$0.00				$1,651.90
817284	BOOKLET INSTR PACK ELECT FC	EA	DOCU	P	491			$0.00				$1,390.69	$261.21	$0.00	$0.00				$1,651.90
817360	LABEL SPECIFICATION SH-22SL	EA	LABL	P	4034	$38.29	$60.36	$0.00				$197.33	$37.06	$98.23	$146.23	1			$577.50
817361	BOOKLET INSTR & WARRANTY SA	EA	DOCU	P	8190	$38.29	$124.34	$255.78	5			$1,390.69	$261.21	$98.23	$146.23	1			$2,314.77
817362	LABEL SPECIFICATION SH-360S	EA	LABL	P	1588	$38.29	$20.52	$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$588.82
817419	LABEL PCB HF SHARP	EA	LABL	P	5014			$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$530.01
817478	BOOKLET FREEZE WITH EASE F&	EA	DOCU	P	71067	$229.72	$1,086.45	$3,120.56	61			$1,390.69	$261.21	$98.23	$146.23	1			$6,333.09
817479	BOOKLET FREEZE WITH EASE	EA	DOCU	P	10433			$409.25	8			$1,390.69	$261.21	$98.23	$146.23	1			$2,305.61
817760	LABEL PCB HF OYST	EA	LABL	P	18871			$767.35	15			$197.33	$37.06	$98.23	$146.23	1			$1,246.20
817762	BOOKLET 'USE & CARE' HF FP	EA	DOCU	P	17710			$0.00				$1,390.69	$261.21	$98.23	$146.23	1			$1,896.36
817763	BOOKLET 'USE & CARE' HF EX	EA	DOCU	P	16783			$0.00				$1,390.69	$261.21	$98.23	$146.23	1			$1,896.36
818078	LABEL CAUTION PACK,G SANDON	EA	LABL	P	32760	$38.29	$494.94	$153.47	3			$197.33	$37.06	$98.23	$146.23	1			$1,165.55
818121	LABEL SPECIFICATION SH-510S	EA	LABL	P	1269	$38.29	$24.14	$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$592.44
818122	LABEL SPECIFICATION SH-701S	EA	LABL	P	1299	$38.29	$19.31	$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$587.61
818216	LABEL FREEZER STORAGE GUIDE	EA	LABL	P	8048	$38.29	$120.72	$665.04	13			$197.33	$37.06	$98.23	$146.23	1			$1,302.90
818320	CABLE CONTROL RECIP STAND H	EA	HARN	P	9701	$76.57	$11.35	$665.04	13			$339.59	$63.78	$98.23	$146.23	1			$1,400.79
818321	CABLE CONTROL RECIP ELECT H	EA	HARN	P	14843	$191.43	$229.72	$358.10	7			$339.59	$63.78	$98.23	$146.23	1			$1,427.08
818322	CABLE COMP RECIP HF	EA	HARN	P	30134	$229.72	$250.00	$920.82	18			$339.59	$63.78	$98.23	$146.23	1			$2,048.37
818323	HARNESS COMP ROT STAND HF	EA	HARN	P	4693	$76.57	$23.42	$409.25	8			$339.59	$63.78	$98.23	$146.23	1			$1,157.07
818324	CABLE CONTROL ROT HF	EA	HARN	P	9936			$562.72	11			$339.59	$63.78	$98.23	$146.23	1			$1,210.55
818325	HARNESS COMP ROT ELECT HF	EA	HARN	P	5062			$306.94	6			$339.59	$63.78	$98.23	$146.23	1			$954.77
818326	HARNESS COMP RECIP HF	EA	HARN	P	12567	$229.72	$110.46	$51.16	1			$339.59	$63.78	$98.23	$146.23	1			$1,039.17
818327	HARNESS TERM BLOCK HF	EA	HARN	P	68408	$344.58	$718.75	$3,478.65	68			$339.59	$63.78	$98.23	$146.23	1			$5,189.81
850300	EVAPORATOR PLATE P120	EA	COOL	P	3701			$0.00				$1,460.22	$274.27	$0.00	$0.00				$1,734.49
850325	LABEL SILVER REFLECTOR	EA	LABL	P	143623	$38.29	$1,207.17	$511.57	10			$197.33	$37.06	$98.23	$146.23	1			$2,235.88
850375	HARNESS TERMINAL BLOCK	EA	HARN	P	94811	$344.58	$1,521.03	$562.72	11			$339.59	$63.78	$98.23	$146.23	1			$3,076.16
850388	HARNESS LAMP	EA	HARN	P	44735			$511.57	10			$339.59	$63.78	$98.23	$146.23	1			$1,159.40
850811	LEAFLET INSTRUCTION CONDENS	EA	DOCU	P	156714	$114.86	$1,931.47	$716.19	14			$1,390.69	$261.21	$98.23	$146.23	1			$4,658.88
850856	CARTON TOP INNER 525	EA	CART	P	97696	$842.30	$742.65	$1,176.60	23			$942.08	$176.95	$98.23	$146.23	1			$4,125.04
850857	CARTON SLEEVE 525	EA	CART	P	48848	$689.15	$314.10	$971.98	19			$942.08	$176.95	$98.23	$146.23	1			$3,338.72
850890	CARTON CARDBOARD SIZE A	EA	CART	P	5108	$229.72	$40.56	$306.94	6			$942.08	$176.95	$98.23	$146.23	1			$1,940.71
850891	PACKER LINER C110,F100,P110	EA	CART	P	10216	$229.72	$74.84	$306.94	6			$942.08	$176.95	$98.23	$146.23	1			$1,974.99
851300	EVAP PLATE BLANK	EA	COOL	P	21220	$76.57	$362.15	$0.00				$1,460.22	$274.27	$98.23	$146.23	1			$2,417.67
851335	CONTROL RANCO K60P1037	EA	CONT	P	5381	$38.29	$120.72	$204.63	4			$2,920.44	$548.55	$98.23	$146.23	1			$4,077.09
852267	HARNESS EARTH CONTROL	EA	HARN	P	18714	$229.72	$193.15	$409.25	8			$339.59	$63.78	$98.23	$146.23	1			$1,479.95
852330	CONTROL RANCO K50 P1172	EA	CONT	P	17548	$38.29	$362.15	$511.57	10			$2,920.44	$548.55	$98.23	$146.23	1			$4,625.46
852331	LABEL CONTROL (852330)	EA	LABL	P	17498			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
871141	SCREW 8X25 SP PAN NIB PHIL	EA	FAST	P	221166	$38.29	$1,810.75	$358.10	7			$768.54	$144.35	$98.23	$146.23	1			$3,364.49
871168	EVAP FROST FREE	EA	COOL	P	33947	$38.29	$120.72	$4,450.63	87			$1,460.22	$274.27	$98.23	$146.23	1			$6,588.59
871374	LEAFLET HANDLE FITTING INST	EA	DOCU	P	10176			$51.16	1			$1,390.69	$261.21	$98.23	$146.23	1			$1,947.52
871406	HARNESS CONT BOX-TERM BOX C	EA	HARN	P	14161	$38.29	$144.86	$716.19	14			$339.59	$63.78	$98.23	$146.23	1			$1,547.17
871407	HARNESS CONT BOX-TERM BOX	EA	HARN	P	26618	$306.29	$272.82	$665.04	13			$339.59	$63.78	$98.23	$146.23	1			$1,891.98
871408	HARNESS CONT BOX-TERM BOX C	EA	HARN	P	13259	$191.43	$156.93	$562.72	11			$339.59	$63.78	$98.23	$146.23	1			$1,558.91
871409	HARNESS CONT BOX-TERM BOX	EA	HARN	P	43144	$612.58	$458.72	$1,637.01	32			$339.59	$63.78	$98.23	$146.23	1			$3,356.14
871450	HARNESS EARTH FROST FREE	EA	HARN	P	39570	$153.15	$386.29	$1,432.39	28			$339.59	$63.78	$98.23	$146.23	1			$2,619.66
871457	SCREW M5X12MM TRUSS PH TYPE	EA	FAST	P	23402	$38.29	$181.08	$51.16	1			$768.54	$144.35	$98.23	$146.23	1			$1,427.88
871470	CARTON TOP INNER 635	EA	CART	P	104236	$880.58	$870.01	$1,176.60	23			$942.08	$176.95	$98.23	$146.23	1			$4,290.68
871628	LABEL BRAND IDENT KELV	EA	LABL	P	58746			$358.10	7			$197.33	$37.06	$98.23	$146.23	1			$836.95
871629	LABEL BRAND IDENT FRIG	EA	LABL	P	24227			$255.78	5			$197.33	$37.06	$98.23	$146.23	1			$734.63
871632	LABEL BRAND IDENT SHACK	EA	LABL	P	22103			$102.31	2			$197.33	$37.06	$98.23	$146.23	1			$581.16
871976	LABEL BRAND IDENT LEON	EA	LABL	P	421			$0.00				$197.33	$37.06	$98.23	$146.23	1			$478.85
872006	EVAP PLATE BLANK	EA	COOL	P	10247	$38.29	$120.72	$0.00				$1,460.22	$274.27	$98.23	$146.23	1			$2,137.96

PART NUMBER	DESCRIPTION	UNT OF MES	COMM CODE	SRC CDE	FCAST USAGE	PURCH 4 COST	STORE 1 COST	STORE 2 --- COST	TRX	STORE 4 -- COST	TRX	ADMIN 1 COST	PURCH 3 COST	STORE 3 COST	STORE 5 COST	STORE 3&5TRX	PLASTICS -- COST	TRX	TOTAL COSTS
872289	EVAP PLATE BLANK	EA	COOL	P	6392	$38.29	$90.54	$0.00				$1,460.22	$274.27	$98.23	$146.23	1			$2,107.78
872521	HARNESS EARTH FAN MOTOR	EA	HARN	P	39570	$191.43	$398.37	$1,432.39	28			$339.59	$63.78	$98.23	$146.23	1			$2,670.02
872560	CONTROL RANCO K59 L6024-0	EA	CONT	P	24518	$38.29	$241.43	$1,023.13	20			$2,920.44	$548.55	$98.23	$146.23	1			$5,016.30
872587	BOOKLET 'USE & CARE' VF F&P	EA	DOCU	P	19887			$102.31	2			$1,390.69	$261.21	$98.23	$146.23	1			$1,998.67
872599	BOOKLET 'USE & CARE' VF	EA	DOCU	P	2475			$51.16	1			$1,390.69	$261.21	$98.23	$146.23	1			$1,947.52
872636	GASKET EVAP COVER 1235+5-0	EA	GASK	P	33947			$1,688.17	33			$9,734.81	$1,828.48	$98.23	$146.23	1			$13,495.92
872854	LABEL LOAD LIMIT C380,410B	EA	LABL	P	22208			$358.10	7			$197.33	$37.06	$98.23	$146.23	1			$836.95
872893	HARNESS VF CONTROL	EA	HARN	P	37428	$191.43	$322.31	$920.82	18			$339.59	$63.78	$98.23	$146.23	1			$2,082.39
872906	HARNESS CON BOX-TERM BOX 11	EA	HARN	P	282	$191.43	$14.49	$0.00				$339.59	$63.78	$98.23	$146.23	1			$853.75
872908	HARNESS CON BOX-TERM BOX 11	EA	HARN	P	1424			$0.00				$339.59	$63.78	$98.23	$146.23	1			$647.83
872909	HARNESS CON BOX-TERM BOX 11	EA	HARN	P	111			$0.00				$339.59	$63.78	$98.23	$146.23	1			$647.83
872991	LABEL BLANK SERIAL PLATE	EA	LABL	P	41095			$0.00				$197.33	$37.06	$98.23	$146.23	1			$478.85
872992	LABEL CARTON TAG & PROCESS	EA	LABL	P	203314	$38.29	$6,035.84	$818.51	16			$197.33	$37.06	$98.23	$146.23	1			$7,371.49
873042	LABEL ENERGY RATING CC365H	EA	LABL	P	909			$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$530.01
873059	LEAFLET WARRANTY SHACK LOCA	EA	DOCU	P	19996			$102.31	2			$1,390.69	$261.21	$98.23	$146.23	1			$1,998.67
873060	LEAFLET WARRANTY F&P EXPORT	EA	DOCU	P	20272			$102.31	2			$1,390.69	$261.21	$98.23	$146.23	1			$1,998.67
873194	LABEL BRAND IDENT 'MILANO W	EA	LABL	P	7179			$0.00				$197.33	$37.06	$98.23	$146.23	1			$478.85
873268	CONTROL RANCO K59 L6027-0	EA	CONT	P	107242	$76.57	$4,225.08	$2,711.30	53			$2,920.44	$548.55	$98.23	$146.23	1			$10,726.40
873293	LEAFLET STORAGE RECORD FC G	EA	LABL	P	121927			$204.63	4			$197.33	$37.06	$98.23	$146.23	1			$683.48
873309	LEALFET BUTTER COMPT	EA	DOCU	P	66509			$1,432.39	28			$1,390.69	$261.21	$98.23	$146.23	1			$3,328.75
873311	LABEL GALAXY ENERGY AWARD	EA	LABL	P	988			$0.00				$197.33	$37.06	$98.23	$146.23	1			$478.85
873323	HARNESS F/F 230V N395B	EA	HARN	P	21078	$880.58	$364.56	$920.82	18	$80.67	1	$339.59	$63.78	$98.23	$146.23	1			$2,894.46
873324	HARNESS F/F 230V N405T/N400	EA	HARN	P	9919	$153.15	$72.43	$306.94	6	$161.35	2	$339.59	$63.78	$98.23	$146.23	1			$1,341.70
873325	HARNESS F/F 230V N375T	EA	HARN	P	7048	$306.29	$91.74	$204.63	4	$80.67	1	$339.59	$63.78	$98.23	$146.23	1			$1,331.16
873327	HARNESS F/F 110V N405T,400H	EA	HARN	P	1424			$0.00		$161.35	2	$339.59	$63.78	$98.23	$146.23	1			$809.18
873329	HARNES F/F 110V N395B	EA	HARN	P	101			$51.16	1	$80.67	1	$339.59	$63.78	$98.23	$146.23	1			$779.66
873380	EVAP PLATE BLANK C380B	EA	COOL	P	55733	$76.57	$1,086.45	$0.00				$1,460.22	$274.27	$98.23	$146.23	1			$3,141.97
873381	EVAP PLATE BLANK C390T	EA	COOL	P	12781	$38.29	$120.72	$0.00				$1,460.22	$274.27	$98.23	$146.23	1			$2,137.96
873382	EVAP BLANK C420T	EA	COOL	P	13961			$0.00				$1,460.22	$274.27	$98.23	$146.23	1			$1,978.95
873383	EVAP BLANK C370	EA	COOL	P	12406	$76.57	$241.43	$0.00				$1,460.22	$274.27	$98.23	$146.23	1			$2,296.95
873387	LABEL BRAND IDENT F&P(INT C	EA	LABL	P	53820	$38.29	$603.58	$460.41	9			$197.33	$37.06	$98.23	$146.23	1			$1,581.13
873418	PACKER DOOR 'T' AWARD MODEL	EA	CART	P	38462			$0.00				$942.08	$176.95	$0.00	$0.00				$1,119.03
873419	LABEL SALES INFORM P120	EA	LABL	P	4865			$102.31	2			$197.33	$37.06	$98.23	$146.23	1			$581.16
873420	LABEL SALES INFORM C170T	EA	LABL	P	11484	$38.29	$132.79	$409.25	8			$197.33	$37.06	$98.23	$146.23	1			$1,059.18
873421	LABEL SALES INFORM C190	EA	LABL	P	5306			$102.31	2			$197.33	$37.06	$98.23	$146.23	1			$581.16
873422	LABEL SALES INFORM P190	EA	LABL	P	327			$0.00				$197.33	$37.06	$98.23	$146.23	1			$478.85
873423	LABEL SALES INFORM C240B	EA	LABL	P	10606			$306.94	6			$197.33	$37.06	$98.23	$146.23	1			$785.79
873424	LABEL SALES INFORM C250T	EA	LABL	P	6644			$153.47	3			$197.33	$37.06	$98.23	$146.23	1			$632.32
873425	LABEL SALES INFORM C270	EA	LABL	P	5171			$153.47	3			$197.33	$37.06	$98.23	$146.23	1			$632.32
873426	LABEL SALES INFORM C335T	EA	LABL	P	10420	$38.29	$132.79	$409.25	8			$197.33	$37.06	$98.23	$146.23	1			$1,059.18
873427	LABEL SALES INFORM C365H	EA	LABL	P	3029			$102.31	2			$197.33	$37.06	$98.23	$146.23	1			$581.16
873428	LABEL SALES INFORM C370	EA	LABL	P	10233			$409.25	8			$197.33	$37.06	$98.23	$146.23	1			$888.10
873429	LABEL SALES INFORM N375T	EA	LABL	P	7562			$204.63	4			$197.33	$37.06	$98.23	$146.23	1			$683.48
873430	LABEL SALES INFORM C380B	EA	LABL	P	12348			$460.41	9			$197.33	$37.06	$98.23	$146.23	1			$939.26
873431	LABEL SALES INFORM C390T	EA	LABL	P	5869	$38.29	$132.79	$102.31	2			$197.33	$37.06	$98.23	$146.23	1			$752.24
873432	LABEL SALES INFORM N395B	EA	LABL	P	10621	$38.29	$132.79	$665.04	13			$197.33	$37.06	$98.23	$146.23	1			$1,314.97
873433	LABEL SALES INFORM N400H	EA	LABL	P	6559			$204.63	4			$197.33	$37.06	$98.23	$146.23	1			$683.48
873434	LABEL SALES INFORM N405T	EA	LABL	P	3539			$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$530.01
873435	LABEL SALES INFORM C410B	EA	LABL	P	7695			$204.63	4			$197.33	$37.06	$98.23	$146.23	1			$683.48
873436	LABEL SALES INFORM C415H	EA	LABL	P	1428			$0.00				$197.33	$37.06	$98.23	$146.23	1			$478.85
873437	LABEL SALES INFORM C420T	EA	LABL	P	2354			$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$530.01
873452	CLIP SPRING CONDENSER TRIPL	EA	FAST	P	9195			$0.00				$768.54	$144.35	$98.23	$146.23	1			$1,157.35
873453	CLIP SPRING CONDENSER DOUBL	EA	FAST	P	272244	$153.15	$2,414.33	$153.47	3			$768.54	$144.35	$98.23	$146.23	1			$3,878.30

PART NUMBER	DESCRIPTION	UNT OF MES	COMM CODE	SRC CDE	FCAST USAGE	PURCH 4 COST	STORE 1 COST	STORE 2 ---¶ COST	TRX	STORE 4 --¶ COST	TRX	ADMIN 1 COST	PURCH 3 COST	STORE 3 COST	STORE 5 COST	STORE 3&5TRX	PLASTICS --¶ COST	TRX	TOTAL COSTS
873524	LABEL NZ PRINCE PHIL AWARD	EA	LABL	P	95625			$1,790.48	35			$197.33	$37.06	$98.23	$146.23	1			$2,269.33
873846	LABEL COLOUR CTN - S,STONE	EA	LABL	P	10964			$102.31	2			$197.33	$37.06	$98.23	$146.23	1			$581.16
874069	NAMEPLATE INSERT SHACK OYST	EA	LABL	P	17150			$767.35	15			$197.33	$37.06	$98.23	$146.23	1	19413.27	1	$20,659.47
874075	NAMEPLATE INSERT SHACK OYST	EA	LABL	P	13960			$153.47	3			$197.33	$37.06	$98.23	$146.23	1			$632.32
874077	NAMEPLATE INSERT SHACK WH S	EA	LABL	P	442			$0.00				$197.33	$37.06	$98.23	$146.23	1			$478.85
874081	NAMEPLATE INSERT FRIG WH S/	EA	LABL	P	451	$38.29	$132.79	$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$701.09
874087	LABEL ENERGY RATING LOCAL C	EA	LABL	P	2077			$0.00				$197.33	$37.06	$98.23	$146.23	1			$478.85
874088	LABEL ENERGY RATING LOCAL N	EA	LABL	P	2455			$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$530.01
874090	LABEL ENERGY RATING LOCAL C	EA	LABL	P	4392			$102.31	2			$197.33	$37.06	$98.23	$146.23	1			$581.16
874091	LABEL ENERGY RATING LOCAL C	EA	LABL	P	2792			$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$530.01
874092	LABEL ENERGY RATING LOCAL C	EA	LABL	P	7474			$255.78	5			$197.33	$37.06	$98.23	$146.23	1			$734.63
874093	LABEL ENERGY RATING LOCAL C	EA	LABL	P	2301			$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$530.01
874094	LABEL ENERGY RATING LOCAL C	EA	LABL	P	8150			$204.63	4			$197.33	$37.06	$98.23	$146.23	1			$683.48
874095	LABEL ENERGY RATING LOCAL N	EA	LABL	P	8203	$38.29	$120.72	$409.25	8			$197.33	$37.06	$98.23	$146.23	1			$1,047.11
874096	LABEL ENERGY RATING LOCAL F	EA	LABL	P	2974			$153.47	3			$197.33	$37.06	$98.23	$146.23	1			$632.32
874097	LABEL ENERGY RATING LOCAL F	EA	LABL	P	2970			$102.31	2			$197.33	$37.06	$98.23	$146.23	1			$581.16
874098	LABEL ENERGY RATING LOCAL H	EA	LABL	P	626			$0.00				$197.33	$37.06	$98.23	$146.23	1			$478.85
874099	LABEL ENERGY RATING LOCAL C	EA	LABL	P	7209	$38.29	$120.72	$204.63	4			$197.33	$37.06	$98.23	$146.23	1			$842.49
874100	LABEL ENERGY RATING LOCAL C	EA	LABL	P	6145			$204.63	4			$197.33	$37.06	$98.23	$146.23	1			$683.48
874101	LABEL ENERGY RATING LOCAL C	EA	LABL	P	2422	$38.29	$120.72	$0.00				$197.33	$37.06	$98.23	$146.23	1			$637.86
874103	LABEL ENERGY RATING LOCAL C	EA	LABL	P	11955			$255.78	5			$197.33	$37.06	$98.23	$146.23	1			$734.63
874104	LABEL ENERGY RATING LOCAL C	EA	LABL	P	3498			$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$530.01
874105	LABEL ENERGY RATING LOCAL H	EA	LABL	P	3220	$38.29	$132.79	$102.31	2			$197.33	$37.06	$98.23	$146.23	1			$752.24
874106	LABEL ENERGY RATING LOCAL H	EA	LABL	P	3707	$38.29	$83.29	$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$651.59
874107	LABEL ENERGY RATING LOCAL H	EA	LABL	P	3952	$38.29	$120.72	$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$689.02
874108	LABEL ENERGY RATING LOCAL H	EA	LABL	P	1078	$38.29	$120.72	$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$689.02
874110	LABEL ENERGY RATING LOCAL F	EA	LABL	P	4883			$204.63	4			$197.33	$37.06	$98.23	$146.23	1			$683.48
874111	LABEL ENERGY RATING LOCAL C	EA	LABL	P	83			$0.00				$197.33	$37.06	$98.23	$146.23	1			$478.85
874112	LABEL ENERGY RATING LOCAL P	EA	LABL	P	4317			$102.31	2			$197.33	$37.06	$98.23	$146.23	1			$581.16
874117	LABEL ENERGY RATING LOCAL N	EA	LABL	P	2449			$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$530.01
874118	LABEL ENERGY RATING LOCAL N	EA	LABL	P	1963			$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$530.01
874121	LABEL FREEZER GUIDE 'B' 635	EA	LABL	P	23907	$114.86	$482.87	$1,637.01	32			$197.33	$37.06	$98.23	$146.23	1			$2,713.59
874122	LABEL FREEZER GUIDE 'T' 635	EA	LABL	P	33675			$1,176.60	23			$197.33	$37.06	$98.23	$146.23	1			$1,655.45
874123	LABEL FREEZER GUIDE COMPACT	EA	LABL	P	37955	$38.29	$253.51	$1,023.13	20			$197.33	$37.06	$98.23	$146.23	1			$1,793.78
874124	LABEL WIRING DIA F/F	EA	LABL	P	39469	$38.29	$603.58	$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$1,171.88
874250	EVAP F/F N308(FIN ON TUBE)	EA	COOL	P	1216			$0.00				$1,460.22	$274.27	$98.23	$146.23	1			$1,978.95
874254	HARNESS WIRING F/F N308F	EA	HARN	P	1216			$0.00				$339.59	$63.78	$0.00	$0.00				$403.37
874257	GASKET EVAP COVER N/F N308	EA	GASK	P	1216			$0.00				$9,734.81	$1,828.48	$0.00	$0.00				$11,563.29
874265	BOOKLET 'USE & CARE OF RF'S	EA	DOCU	P	35017			$204.63	4			$1,390.69	$261.21	$98.23	$146.23	1			$2,100.99
874266	BOOKLET 'USE & CARE OF RF'S	EA	DOCU	P	101434	$76.57	$2,207.55	$1,330.07	26			$1,390.69	$261.21	$98.23	$146.23	1			$5,510.55
874329	HARNESS LEAD EARTH	EA	HARN	P	12947	$76.57	$41.29	$204.63	4			$339.59	$63.78	$98.23	$146.23	1			$970.32
874339	LABEL ENERGY RATING F&PN369	EA	LABL	P	1553			$102.31	2			$197.33	$37.06	$98.23	$146.23	1			$581.16
874348	NAMEPLATE INSERT FRIG OY SD	EA	LABL	P	400			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874350	NAMEPLATE INSERT LEON OYST	EA	LABL	P	424			$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$530.01
874351	NAMEPLATE INSERT KELV OYST	EA	LABL	P	2838			$153.47	3			$197.33	$37.06	$98.23	$146.23	1			$632.32
874353	NAMEPLATE INSERT KELV OY SD	EA	LABL	P	23080	$76.57	$265.58	$0.00				$197.33	$37.06	$98.23	$146.23	1			$821.00
874354	NAMEPLATE INSERT F&P OYST S	EA	LABL	P	20962	$114.86	$374.22	$1,125.45	22			$197.33	$37.06	$98.23	$146.23	1			$2,093.38
874355	NAMEPLATE INSERT SHACK OYST	EA	LABL	P	509			$0.00				$197.33	$37.06	$98.23	$146.23	1			$478.85
874357	NAMEPLATE INSERT SHACK OY S	EA	LABL	P	1434			$0.00				$197.33	$37.06	$98.23	$146.23	1			$478.85
874363	NAMEPLATE INSERT FRIG OY S/	EA	LABL	P	130			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874370	NAMEPLATE INSERT F&P OY S/D	EA	LABL	P	120			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874371	NAMEPLATE INSERT F&P WH S/D	EA	LABL	P	1308			$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$530.01
874375	NAMEPLATE INSERT SHACK WH X	EA	LABL	P	1453			$0.00				$197.33	$37.06	$98.23	$146.23	1			$478.85

PART NUMBER	DESCRIPTION	UNT OF MES	COMM CODE	SRC CDE	FCAST USAGE	PURCH 4 COST	STORE 1 COST	STORE 2 --- COST	TRX	STORE 4 -- COST	TRX	ADMIN 1 COST	PURCH 3 COST	STORE 3 COST	STORE 5 COST	STORE 3&5TRX	PLASTICS -- COST	TRX	TOTAL COSTS
874377	NAMEPLATE INSERT FRIG WH X-	EA	LABL	P	696			$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$530.01
874380	NAMEPLATE INSERT FRIG OY XR	EA	LABL	P	472			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874382	NAMEPLATE INSERT KELV OYST	EA	LABL	P	6858			$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$530.01
874384	NAMEPLATE INSERT KELV OY XR	EA	LABL	P	21084			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874385	NAMEPLATE INSERT F&P OYST X	EA	LABL	P	19073	$38.29	$120.72	$511.57	10			$197.33	$37.06	$98.23	$146.23	1			$1,149.43
874386	NAMEPLATE INSERT F&P WH X-R	EA	LABL	P	2509			$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$530.01
874390	NAMEPLATE INSERT SHACK WH X	EA	LABL	P	1060			$0.00				$197.33	$37.06	$98.23	$146.23	1			$478.85
874391	NAMEPLATE INSERT FRIG OYST	EA	LABL	P	50			$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$530.01
874394	NAMEPLATE INSERT FRIG WH XR	EA	LABL	P	3862			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874395	NAMEPLATE INSERT FRIG OY XR	EA	LABL	P	233			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874397	NAMEPLATE INSERT KELV OY X-	EA	LABL	P	4608			$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$530.01
874399	NAMEPLATE INSERT KELV OY XR	EA	LABL	P	6652			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874409	NAMEPLATE INSERT F&P OY X-R	EA	LABL	P	9258			$255.78	5			$197.33	$37.06	$98.23	$146.23	1			$734.63
874410	NAMEPLATE INSERT F&P WH X-R	EA	LABL	P	6811	$38.29	$132.79	$306.94	6			$197.33	$37.06	$98.23	$146.23	1			$956.87
874479	LEAFLET 'AUTHORISED C/S'S'	EA	DOCU	P	54080			$460.41	9			$1,390.69	$261.21	$98.23	$146.23	1			$2,356.77
874480	LEAFLET WARRANTY F&P AUST(V	EA	DOCU	P	46259			$613.88	12			$1,390.69	$261.21	$0.00	$0.00				$2,265.78
874481	LEAFLET WARRANTY LOCAL	EA	DOCU	P	92920	$76.57	$1,267.53	$1,227.76	24			$1,390.69	$261.21	$98.23	$146.23	1			$4,468.22
874498	LABEL ENERGY RATING LOCAL C	EA	LABL	P	3741	$38.29	$120.72	$0.00				$197.33	$37.06	$98.23	$146.23	1			$637.86
874501	LABEL SALES INFORM C229	EA	LABL	P	3741			$204.63	4			$197.33	$37.06	$98.23	$146.23	1			$683.48
874510	HARNESS FEEDER CABLE 4 CORE	EA	HARN	P	6644	$306.29	$105.63	$358.10	7			$339.59	$63.78	$98.23	$146.23	1			$1,417.85
874511	HARNESS FEEDER CABLE 4 CORE	EA	HARN	P	10606	$344.58	$148.96	$409.25	8			$339.59	$63.78	$98.23	$146.23	1			$1,550.62
874512	HARNESS FEEDER CABLE 4 CORE	EA	HARN	P	5171	$114.86	$39.35	$358.10	7			$339.59	$63.78	$98.23	$146.23	1			$1,160.14
874513	HARNESS FEEDER CABLE 4 CORE	EA	HARN	P	22314	$191.43	$175.64	$511.57	10			$339.59	$63.78	$98.23	$146.23	1			$1,526.47
874525	LABEL SALES INFORM N369B	EA	LABL	P	5896	$38.29	$132.79	$306.94	6			$197.33	$37.06	$98.23	$146.23	1			$956.87
874526	LABEL ENERGY RATING N369B	EA	LABL	P	4070			$255.78	5			$197.33	$37.06	$98.23	$146.23	1			$734.63
874527	GASKET EVAP COVER N/F N369B	EA	GASK	P	5623	$38.29	$58.67	$0.00				$9,734.81	$1,828.48	$98.23	$146.23	1			$11,904.71
874653	LABEL ENERGY RATING N308 LO	EA	LABL	P	1216			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874701	NAMEPLATE INSERT FRIG WH XR	EA	LABL	P	12512			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874702	NAMEPLATE INSERT FRIG WH SD	EA	LABL	P	13845			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874703	LABEL ENERGY RATING F&PP120	EA	LABL	P	182	$38.29	$132.79	$0.00				$197.33	$37.06	$98.23	$146.23	1			$649.93
874704	LABEL ENERGY RATING F&PP190	EA	LABL	P	132			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874706	LABEL ENERGY RATING F&PC190	EA	LABL	P	657			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874707	LABEL ENERGY RATING F&PC270	EA	LABL	P	2217			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874708	LABEL ENERGY RATING F&PC170	EA	LABL	P	1146			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874709	LABEL ENERGY RATING F&PC250	EA	LABL	P	2069			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874710	LABEL ENERGY RATING F&PC240	EA	LABL	P	2300			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874711	LABEL ENERGY RATING F&PC370	EA	LABL	P	2935			$0.00				$197.33	$37.06	$98.23	$146.23	1			$478.85
874712	LABEL ENERGY RATING F&PC335	EA	LABL	P	1971			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874713	LABEL ENERGY RATING F&PC390	EA	LABL	P	2732			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874714	LABEL ENERGY RATING F&PC420	EA	LABL	P	2195			$0.00				$197.33	$37.06	$98.23	$146.23	1			$478.85
874715	LABEL ENERGY RATING F&PC415	EA	LABL	P	1428			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874716	LABEL ENERGY RATING F&PC380	EA	LABL	P	1978			$0.00				$197.33	$37.06	$98.23	$146.23	1			$478.85
874717	LABEL ENERGY RATING F&PC410	EA	LABL	P	3808			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874718	LABEL ENERGY RATING F&PN375	EA	LABL	P	2477			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874719	LABEL ENERGY RATING F&PN405	EA	LABL	P	1989			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874720	LABEL ENERGY RATING F&PN400	EA	LABL	P	1034			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874721	LABEL ENERGY RATING F&PN395	EA	LABL	P	6269			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874722	LABEL ENERGY RATING F&PF160	EA	LABL	P	890			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874723	LABEL ENERGY RATING F&PF230	EA	LABL	P	1878			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874724	LABEL ENERGY RATING F&PF310	EA	LABL	P	2633	$38.29	$128.44	$0.00				$197.33	$37.06	$98.23	$146.23	1			$645.58
874725	LABEL ENERGY RATING F&PH160	EA	LABL	P	4001	$38.29	$120.72	$562.72	11			$197.33	$37.06	$98.23	$146.23	1			$1,200.58
874726	LABEL ENERGY RATING F&PH220	EA	LABL	P	2408			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874727	LABEL ENERGY RATING F&PH360	EA	LABL	P	2140			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39

PART NUMBER	DESCRIPTION	UNT OF MES	COMM CODE	SRC CDE	FCAST USAGE	PURCH 4 COST	STORE 1 COST	STORE 2 ---¶ COST	TRX	STORE 4 --¶ COST	TRX	ADMIN 1 COST	PURCH 3 COST	STORE 3 COST	STORE 5 COST	STORE 3&5TRX	PLASTICS --¶ COST	TRX	TOTAL COSTS
874728	LABEL ENERGY RATING F&PH510	EA	LABL	P	536			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
874729	LABEL ENERGY RATING F&PH701	EA	LABL	P	452			$0.00				$197.33	$37.06	$0.00	$0.00				$234.39
900084	LABEL BAR-CODE	EA	LABL	P	41095			$153.47	3			$197.33	$37.06	$98.23	$146.23	1			$632.32
900376	SCREW #4X12MM AB MUSH PH ST	EA	FAST	P	123285	$38.29	$1,388.24	$971.98	19			$768.54	$144.35	$98.23	$146.23	1			$3,555.86
900377	SCREW #8X32X9.5 TY T PAN PH	EA	FAST	P	27066			$767.35	15			$768.54	$144.35	$98.23	$146.23	1			$1,924.70
900382	SCREW #8X3/8 AB PAN PHIL ST	EA	FAST	P	79140	$38.29	$724.30	$511.57	10			$768.54	$144.35	$98.23	$146.23	1			$2,431.51
900438	O-RING 5mmI/DX10mmO/D	EA	FAST	P	18782			$306.94	6			$768.54	$144.35	$98.23	$146.23	1			$1,464.29
900439	LABEL SILVER 115X100M PA-T1	RL	LABL	P	97			$306.94	6			$197.33	$37.06	$98.23	$146.23	1			$785.79
900440	LABEL FILM 115X100M NPL8KLY	RL	LABL	P	97			$358.10	7			$197.33	$37.06	$98.23	$146.23	1			$836.95
900441	LABEL CARBON 110X330M	RL	LABL	P	32			$51.16	1			$197.33	$37.06	$98.23	$146.23	1			$530.01
900444	SCREW #6X19.04 PAN WASH S/T	EA	FAST	P	82190			$51.16	1			$768.54	$144.35	$98.23	$146.23	1			$1,208.51
900450	TIE CABLE 7" BARLOCK	EA	FAST	P	37			$0.00				$768.54	$144.35	$98.23	$146.23	1			$1,157.35
900456	SCREW #8X20 TY17 PAN PHIL S	EA	FAST	P	35346			$255.78	5			$768.54	$144.35	$98.23	$146.23	1			$1,413.13
900475	SCREW #8X16.4MM SP PAN NIB	EA	FAST	P	718618	$38.29	$6,156.55	$767.35	15			$768.54	$144.35	$98.23	$146.23	1			$8,119.54
900496	SCREW #10X32X12 TYPE1 PAN P	EA	FAST	P	558198	$38.29	$1,448.60	$767.35	15			$768.54	$144.35	$98.23	$146.23	1			$3,411.59
900500	SCREW #8X32MM PAN PH ZP	EA	FAST	P	57468			$153.47	3			$768.54	$144.35	$98.23	$146.23	1			$1,310.82
900656	EXTRUSION TRIM BASE PANEL	EA	EXTR	P	82190	$76.57	$1,014.02	$562.72	11			$29,204.43	$5,485.45	$98.23	$146.23	1			$36,587.65
900746	LABEL CFC	EA	LABL	P	197537	$38.29	$1,279.60	$6,906.15	135			$197.33	$37.06	$98.23	$146.23	1			$8,702.89
904130	LABEL COLOUR CTN FA	EA	LABL	P	1716			$0.00				$197.33	$37.06	$98.23	$146.23	1			$478.85
905130	LABEL COLOUR CTN AL	EA	LABL	P	4978			$0.00				$197.33	$37.06	$98.23	$146.23	1			$478.85
907001	CARTON OUTER HF160	EA	CART	P	7457	$765.73	$156.93	$1,278.92	25			$942.08	$176.95	$98.23	$146.23	1			$3,565.07
907002	CARTON OUTER HF220	EA	CART	P	11436	$344.58	$60.36	$460.41	9			$942.08	$176.95	$98.23	$146.23	1			$2,228.84
907003	CARTON OUTER HF360	EA	CART	P	9829	$344.58	$54.32	$460.41	9			$942.08	$176.95	$98.23	$146.23	1			$2,222.80
907004	CARTON OUTER HF510	EA	CART	P	3806	$229.72	$36.22	$306.94	6			$942.08	$176.95	$98.23	$146.23	1			$1,936.37
907005	CARTON OUTER HF701	EA	CART	P	3553	$306.29	$48.29	$409.25	8			$942.08	$176.95	$98.23	$146.23	1			$2,127.32
907006	CARTON OUTER HF170 SHARP	EA	CART	P	513			$0.00				$942.08	$176.95	$0.00	$0.00				$1,119.03
907007	CARTON OUTER HF220 SHARP	EA	CART	P	4010	$38.29	$6.04	$51.16	1			$942.08	$176.95	$98.23	$146.23	1			$1,458.98
907008	CARTON OUTER HF360 SHARP	EA	CART	P	491	$76.57	$12.07	$102.31	2			$942.08	$176.95	$0.00	$0.00				$1,309.98
907011	CARTON INNER HF160	EA	CART	P	7970	$727.44	$156.93	$1,125.45	22			$942.08	$176.95	$98.23	$146.23	1			$3,373.31
907012	CARTON INNER HF220	EA	CART	P	15446	$421.15	$66.39	$562.72	11			$942.08	$176.95	$98.23	$146.23	1			$2,413.75
907013	CARTON INNER HF360	EA	CART	P	10320	$382.86	$66.39	$511.57	10			$942.08	$176.95	$98.23	$146.23	1			$2,324.31
907014	CARTON INNER HF510	EA	CART	P	3806	$229.72	$36.22	$306.94	6			$942.08	$176.95	$98.23	$146.23	1			$1,936.37
907015	CARTON INNER HF701	EA	CART	P	3553	$268.00	$42.25	$358.10	7			$942.08	$176.95	$98.23	$146.23	1			$2,031.84
907049	CARTON BASE BOARD H510	EA	CART	P	4000	$38.29	$73.52	$0.00				$942.08	$176.95	$98.23	$146.23	1			$1,475.30
907050	CARTON BASE BOARD H701	EA	CART	P	3500			$0.00				$942.08	$176.95	$98.23	$146.23	1			$1,363.49
907130	CARTON BASE SML 635	EA	CART	P	33211	$918.87	$311.57	$1,278.92	25			$942.08	$176.95	$98.23	$146.23	1			$3,872.85
907131	CARTON BASE MID 635	EA	CART	P	33163	$804.01	$272.82	$1,227.76	24			$942.08	$176.95	$98.23	$146.23	1			$3,668.08
907132	CARTON BASE LGE 635	EA	CART	P	37862	$804.01	$311.21	$1,074.29	21			$942.08	$176.95	$98.23	$146.23	1			$3,553.00
907135	CARTON SLEEVE SML 635	EA	CART	P	33211	$804.01	$313.86	$1,074.29	21			$942.08	$176.95	$98.23	$146.23	1			$3,555.65
907136	CARTON SLEEVE MID 635	EA	CART	P	33163	$842.30	$271.61	$1,176.60	23			$942.08	$176.95	$98.23	$146.23	1			$3,654.00
907137	CARTON SLEEVE LGE 635	EA	CART	P	37862	$804.01	$301.79	$1,074.29	21			$942.08	$176.95	$98.23	$146.23	1			$3,543.58
907140	CARTON RF C229	EA	CART	P	3741	$191.43	$36.22	$511.57	10			$942.08	$176.95	$98.23	$146.23	1			$2,102.71
907151	CARTON LINER RF C229	EA	CART	P	7482	$114.86	$36.22	$306.94	6			$942.08	$176.95	$98.23	$146.23	1			$1,821.51
SP0001	SCREW #8X16 AB CSK PHIL ST	EA	FAST	P	328760	$76.57	$4,889.03	$255.78	5			$768.54	$144.35	$98.23	$146.23	1			$6,378.73
SP0002	SCREW #8X16 AB PAN PHIL ST	EA	FAST	P	328760			$306.94	6			$768.54	$144.35	$98.23	$146.23	1			$1,464.29
SP0006	SCREW #8X20 AB PAN PHIL ST	EA	FAST	P	408027	$38.29	$3,380.07	$306.94	6			$768.54	$144.35	$98.23	$146.23	1			$4,882.65
SP0008	SCREW #6X12 AB TRUSS PHIL S	EA	FAST	P	79140	$38.29	$965.73	$51.16	1			$768.54	$144.35	$98.23	$146.23	1			$2,212.53
SP0009	SCREW #6X16 AB TRUSS PHIL S	EA	FAST	P	41095	$38.29	$482.87	$204.63	4			$768.54	$144.35	$98.23	$146.23	1			$1,883.14
SP0054	SCREW #8X50 AB PAN PHIL SS	EA	FAST	P	327			$0.00				$768.54	$144.35	$98.23	$146.23	1			$1,157.35
SP0055	SCREW #8X20 AB PAN PHIL SS	EA	FAST	P	66509	$38.29	$482.87	$358.10	7			$768.54	$144.35	$98.23	$146.23	1			$2,036.61
SP0056	SCREW #8X12 AB PAN PHIL SS	EA	FAST	P	21212			$153.47	3			$768.54	$144.35	$98.23	$146.23	1			$1,310.82
SP0057	SCREW #8X25 AB PAN PHIL SS	EA	FAST	P	326482	$38.29	$2,897.20	$358.10	7			$768.54	$144.35	$98.23	$146.23	1			$4,450.94
SP0059	SCREW #8X40 AB PAN PHIL SS	EA	FAST	P	79151	$38.29	$724.30	$204.63	4			$768.54	$144.35	$98.23	$146.23	1			$2,124.57

PART NUMBER	DESCRIPTION	UNT OF MES	COMM CODE	SRC CDE	FCAST USAGE	PURCH 4 COST	STORE 1 COST	STORE 2 ---¶ COST	TRX	STORE 4 --¶ COST	TRX	ADMIN 1 COST	PURCH 3 COST	STORE 3 COST	STORE 5 COST	STORE 3&5TRX	PLASTICS --¶ COST	TRX	TOTAL COSTS
SP0201	SCREW #8X12 SP PAN NIB ST Z	EA	FAST	P	10305632	$38.29	$90,296.09	$8,236.22	161			$768.54	$144.35	$98.23	$146.23	1			$99,727.95
SP0207	SCREW 10X75 SCREWFAST CSK P	EA	FAST	P	200282	$38.29	$1,629.68	$1,381.23	27			$768.54	$144.35	$98.23	$146.23	1			$4,206.55
SP0282	SCREW M5X20 HEX PHIL MS ST	EA	FAST	P	324674	$38.29	$2,897.20	$511.57	10			$768.54	$144.35	$98.23	$146.23	1			$4,604.41
SP0301	NUT 2BA HEX PRESSED ST ZP	EA	FAST	P	18782			$153.47	3			$768.54	$144.35	$98.23	$146.23	1			$1,310.82
SP0302	NUT M10 HEX 17 A/F ZP	EA	FAST	P	324674	$76.57	$3,476.64	$869.66	17			$768.54	$144.35	$98.23	$146.23	1			$5,580.22
SP0305	NUT (LOCK) 18MM	EA	FAST	P	18782			$306.94	6			$768.54	$144.35	$98.23	$146.23	1			$1,464.29
SP0306	LOCK HOUSING	EA	FAST	P	18782			$204.63	4			$768.54	$144.35	$98.23	$146.23	1			$1,361.98
SP0351	WASHER LOCK 5MM EXT/T ST ZP	EA	FAST	P	818083	$76.57	$8,691.60	$3,120.56	61			$768.54	$144.35	$98.23	$146.23	1			$13,046.08
SP0353	WASHER 20X30X1.6 RED FIBRE	EA	FAST	P	18782			$306.94	6			$768.54	$144.35	$98.23	$146.23	1			$1,464.29
SP0354	PIN ROLL 1/8X5/16	EA	FAST	P	82190	$37.73	$2,417.89	$562.72	11			$768.54	$144.35	$98.23	$146.23	1			$4,175.69
SP0358	WASHER BRASS FLAT 5X10X1	EA	FAST	P	5331			$51.16	1			$768.54	$144.35	$98.23	$146.23	1			$1,208.51
SP0461	RIVET #11X2/16 OVS/T ALI	EA	FAST	P	11545			$51.16	1			$768.54	$144.35	$98.23	$146.23	1			$1,208.51
SP0807	LABEL MC19 MATT SILVER	EA	LABL	P	324020			$1,022.84	20			$196.78	$38.50	$100.36	$148.36	1			$1,506.84
					21997607	$26,187.53	$192,304.81	$140,424.89	2745	$564.71	7	$233,635.69	$43,883.96	$27,702.99	$41,238.99	282	$19,413.27	1	$725,356.84
Appendix No. 16	Source Code P - 2					$27,681.21	$163,168.90	$173,830.35	3398			$334,298.05	$62,790.77	$27,013.25	$40,213.25	275			
Appendix No. 17	Source Code R					$2,833.26	$67,477.29	$65,480.51	1280			$176,779.26	$33,204.27	$8,153.09	$12,137.09	83			
Appendix No. 4	Source Code F							104,717.71	2047					$11,787.60	$17,547.60	120			
Appendix No. 2	Source Code A - 1							$51.16	1					$196.46	$292.46	2			
Appendix No. 3	Source Code A - 2							$1,432.38	28					$687.61	$1,023.61	7			
					21997607	$56,702.00	$422,951.00	$485,937.00	9499	$564.71	7	$744,713.00	$139,879.00	$75,541.00	$112,453.00	769	$19,413.27	1	$725,356.84

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	PURCH 4 COST	STORE 1 COST	STORE 2 COST	STORE 2 TRX	STORE 4 COST	STORE 4 TRX	ADMIN 1 COST	PURCH 3 COST	STORE 3 COST	STORE 5 COST	STORE 3&5TRX	TOTAL COSTS
090037	TUBE CAPILLARY 0.787X2.057X366	EA	MIMP	P	98888	$38.29	$965.73	$1,023.13	20			596.01	111.95	$98.23	$146.23	1	$2,979.57
091023	TUBE CAPILLARY 0.787X2.057X305	EA	MISC	P	7359			$255.78	5			270.41	50.79	$98.23	$146.23	1	$821.44
203590	SPACER TUBE	EA	PLAS	P	694690	$38.29	$3,017.92	$1,739.33	34			811.23	152.37	$98.23	$146.23	1	$6,003.60
203717	GROMMET CONDENSER LINE 5MM	EA	MISC	P	82190			$409.25	8			270.41	50.79	$98.23	$146.23	1	$974.91
203825	SWITCH LIGHT ECI-711B	EA	MISC	P	44735	$114.86	$217.29	$716.19	14			270.41	50.79	$98.23	$146.23	1	$1,614.00
203882	CAP TUBE PROTECTION	EA	MISC	P	14778			$51.16	1			270.41	50.79	$98.23	$146.23	1	$616.82
209668	COMPRESSOR NA FN91Q17GA 220/24	EA	NATL	P	76431	$38.29	$388.22	$1,330.07	26			730.11	137.14	$98.23	$146.23	1	$2,868.29
209686	CAPACITOR START 60MF125V 26MM	EA	MIMP	P	3665			$0.00				596.01	111.95	$98.23	$146.23	1	$952.42
209687	CAPACITOR START 100MF125V 26MM	EA	MIMP	P	1336	$38.29	$24.51	$0.00				596.01	111.95	$98.23	$146.23	1	$1,015.22
209699	COMPRESSOR NA S112LJAA 100V50/	EA	NATL	P	8557	$38.29	$87.40	$51.16	1			730.11	137.14	$98.23	$146.23	1	$1,288.56
209700	COMPRESSOR NA S075LKAA 220/240	EA	NATL	P	23396			$869.66	17			730.11	137.14	$98.23	$146.23	1	$1,981.37
209701	COMPRESSOR NA S110LKAA 220/240	EA	NATL	P	35914	$76.57	$582.34	$1,125.45	22			730.11	137.14	$98.23	$146.23	1	$2,896.07
209702	COMPRESSOR NA S111LKAA 220/240	EA	NATL	P	12222	$38.29	$145.58	$204.63	4			730.11	137.14	$98.23	$146.23	1	$1,500.21
209706	COMPRESSOR NA S090LKAA 115V60H	EA	NATL	P	125			$0.00				730.11	137.14	$0.00	$0.00		$867.25
209707	COMPRESSOR NA S112LKAA 115V50H	EA	NATL	P	724			$0.00				730.11	137.14	$98.23	$146.23	1	$1,111.71
209708	COMPRESSOR NA S113LKAA 115V60H	EA	NATL	P	634			$0.00				730.11	137.14	$0.00	$0.00		$867.25
209710	COMPRESSOR NA FN91Q17G O/C 115	EA	NATL	P	1067	$38.29	$48.53	$0.00				730.11	137.14	$98.23	$146.23	1	$1,198.53
209816	COMPRESSOR NA FN40R80R 220/240	EA	NATL	P	115	$38.29	$10.86	$153.47	3			730.11	137.14	$98.23	$146.23	1	$1,314.33
209841	CAPACITOR RUN FN40,50,60R 3.5m	EA	MIMP	P	4603			$102.31	2			596.01	111.95	$98.23	$146.23	1	$1,054.73
209843	CAPACITOR RUN FN40,50R 10uf 23	EA	MIMP	P	179			$0.00				596.01	111.95	$98.23	$146.23	1	$952.42
209860	COMPRESSOR NA FN73Q13GA O/C 11	EA	NATL	P	616			$0.00				730.11	137.14	$98.23	$146.23	1	$1,111.71
209861	COMPRESSOR NA FN73F13 100V50/6	EA	NATL	P	37			$0.00				730.11	137.14	$98.23	$146.23	1	$1,111.71
209867	COMPRESSOR NA FN73Q O/C 220/24	EA	NATL	P	39064	$38.29	$776.45	$409.25	8			730.11	137.14	$98.23	$146.23	1	$2,335.70
209873	CAPACITOR RUN FN43S/FN60R 15uf	EA	MIMP	P	9856	$76.57	$111.90	$102.31	2			596.01	111.95	$98.23	$146.23	1	$1,243.20
209874	COMPRESSOR NA FN40R68T 100V50/	EA	NATL	P	2396			$153.47	3			730.11	137.14	$98.23	$146.23	1	$1,265.18
209877	CAPACITOR RUN FN40,50R 12uf 21	EA	MIMP	P	3665			$102.31	2			596.01	111.95	$98.23	$146.23	1	$1,054.73
209891	CAPACITOR RUN FN60R 12uf 230V	EA	MIMP	P	115			$0.00				596.01	111.95	$98.23	$146.23	1	$952.42
209893	COMPRESSOR NA FN50R94T 100V50/	EA	NATL	P	1269			$409.25	8			730.11	137.14	$98.23	$146.23	1	$1,520.96
209894	COMPRESSOR NA FN60R12T 100V50/	EA	NATL	P	1299	$38.29	$14.49	$153.47	3			730.11	137.14	$98.23	$146.23	1	$1,317.96
209895	COMPRESSOR NA FN50R10R 115V60	EA	NATL	P	179			$153.47	3			730.11	137.14	$98.23	$146.23	1	$1,265.18
209896	COMPRESSOR NA FN60R12R 115V60	EA	NATL	P	115			$51.16	1			730.11	137.14	$98.23	$146.23	1	$1,162.87
209897	COMPRESSOR NA FN50R10R 220/240	EA	NATL	P	2485			$153.47	3			730.11	137.14	$98.23	$146.23	1	$1,265.18
209898	COMPRESSOR NA FN60R12R 220/240	EA	NATL	P	2384			$204.63	4			730.11	137.14	$98.23	$146.23	1	$1,316.34
280335	TUBE CAPILLARY 0.66X1.727X3050	EA	MIMP	P	96348	$38.29	$1,086.45	$460.41	9			596.01	111.95	$98.23	$146.23	1	$2,537.57
313096	TUBE COPPER ALUM TAIL ASSY P80	EA	MIMP	P	5090	$38.29	$140.88	$0.00				596.01	111.95	$98.23	$146.23	1	$1,131.59
322130	BAG POLY (230MMX400MM)	EA	MISC	P	157056			$2,250.89	44			270.41	50.79	$98.23	$146.23	1	$2,816.55
359165	LOCK - BARREL & KEYS	EA	MIMP	P	18782			$204.63	4			596.01	111.95	$98.23	$146.23	1	$1,157.05
402261	LID UTILITY BIN AS MOULDED	EA	PLAS	P	70766	$38.29	$627.73	$306.94	6			811.23	152.37	$98.23	$146.23	1	$2,181.02
804055	TAPE 3M 4085 D/S 18MMX1.0MM(18	RL	TAPE	P	579	$191.43	$11.59	$1,943.95	38			1043.02	195.91	$98.23	$146.23	1	$3,630.36
805176	GROMMET EVAP FC	EA	MISC	P	81572	$114.86	$724.30	$511.57	10			270.41	50.79	$98.23	$146.23	1	$1,916.39
805422	HOUSING RECEPTACLE TIMER DEFRO	EA	MIMP	P	40786			$511.57	10			596.01	111.95	$98.23	$146.23	1	$1,463.99
805439	FILTER STRAINER BTTM FC N/F	EA	MISC	P	51392			$767.35	15			270.41	50.79	$98.23	$146.23	1	$1,333.01
812261	NAMEPLATE SHARP	EA	MIMP	P	5014	$38.29	$241.43	$0.00				596.01	111.95	$98.23	$146.23	1	$1,232.14
812302	TUBE CARDBOARD	EA	MISC	P	41095	$38.29	$960.42	$409.25	8			270.41	50.79	$98.23	$146.23	1	$1,973.62
815055	CLIP DISCHARGE LINE	EA	MIMP	P	17854			$102.31	2			596.01	111.95	$98.23	$146.23	1	$1,054.73
815056	SLEEVE DISCHARGE LINE	EA	MIMP	P	17854			$102.31	2			596.01	111.95	$98.23	$146.23	1	$1,054.73
815104	PLUG FOAM 80X80X12MM PINK	EA	MISC	P	7359	$38.29	$120.72	$51.16	1			270.41	50.79	$98.23	$146.23	1	$775.83
815117	DRAIN ELBOW BODY	EA	PLAS	P	41095	$38.29	$603.58	$153.47	3			811.23	152.37	$98.23	$146.23	1	$2,003.40
815147	EVAP COIL BACK & BOTTOM H160	EA	SYST	P	7970	$153.15	$144.86	$204.63	4			1825.28	342.84	$0.00	$0.00		$2,670.76
815148	EVAP COIL BACK & BOTTOM H220	EA	SYST	P	15446	$76.57	$72.43	$102.31	2			1825.28	342.84	$0.00	$0.00		$2,419.43
815149	EVAP COIL BACK & BOTTOM H360	EA	SYST	P	10320	$38.29	$36.22	$51.16	1			1825.28	342.84	$0.00	$0.00		$2,293.79
815150	EVAP COIL BACK & BOTTOM H510	EA	SYST	P	3806	$38.29	$36.22	$51.16	1			1825.28	342.84	$0.00	$0.00		$2,293.79
815151	EVAP COIL BACK & BOTTOM H701	EA	SYST	P	3553	$76.57	$48.29	$102.31	2			1825.28	342.84	$0.00	$0.00		$2,395.29

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	PURCH 4 COST	STORE 1 COST	STORE 2 COST	STORE 2 TRX	STORE 4 COST	STORE 4 TRX	ADMIN 1 COST	PURCH 3 COST	STORE 3 COST	STORE 5 COST	STORE 3&5TRX	TOTAL COSTS
815158	TUBE ACCUMULATOR	EA	SYST	P	59809	$76.57	$746.99	$1,023.13	20			1825.28	342.84	$98.23	$146.23	1	$4,259.27
815161	PIN COMPRESSOR MNTG ROTARY	EA	MIMP	P	41980			$306.94	6			596.01	111.95	$98.23	$146.23	1	$1,259.36
815162	GROMMET COMPRESSOR MNTG ROTARY	EA	MIMP	P	41980			$1,023.13	20			596.01	111.95	$98.23	$146.23	1	$1,975.55
815191	SPACER FOAM BARRIER	EA	MISC	P	721778	$114.86	$9,053.75	$8,082.75	158			270.41	50.79	$98.23	$146.23	1	$17,817.02
815193	GROMMET DRAIN OUTLET HF SPICE	EA	PLAS	P	3806			$0.00				811.23	152.37	$0.00	$0.00		$963.60
815436	BAG POLY 800X700X1280X50mu	EA	MISC	P	23416	$38.29	$175.04	$2,762.46	54			270.41	50.79	$98.23	$146.23	1	$3,541.45
815437	BAG POLY 1100X760X1280X50mu	EA	MISC	P	10320			$306.94	6			270.41	50.79	$98.23	$146.23	1	$872.60
815438	BAG POLY 1300X900X1320X50mu	EA	MISC	P	3806			$255.78	5			270.41	50.79	$98.23	$146.23	1	$821.44
815439	BAG POLY 1700X900X1320X50mu	EA	MISC	P	3553	$38.29	$121.92	$409.25	8			270.41	50.79	$98.23	$146.23	1	$1,135.12
815492	LAMPHOLDER HF	EA	MIMP	P	23885			$306.94	6			596.01	111.95	$98.23	$146.23	1	$1,259.36
815536	RETAINER CAPACITOR START	EA	MISC	P	7148			$153.47	3			270.41	50.79	$98.23	$146.23	1	$719.13
815730	CARTON BASE PAD POLYSTYRENE H1	EA	MISC	P	7970	$306.29	$169.00	$409.25	8			270.41	50.79	$0.00	$0.00		$1,205.74
815793	SPACER POLY 36X36X36	EA	MISC	P	23885	$38.29	$482.87	$51.16	1			270.41	50.79	$98.23	$146.23	1	$1,137.98
815826	CONDENSER FORMED HF160	EA	SYST	P	7970	$306.29	$160.92	$409.25	8			1825.28	342.84	$0.00	$0.00		$3,044.58
815827	CONDENSER FORMED HF220	EA	SYST	P	15446	$114.86	$61.57	$153.47	3			1825.28	342.84	$0.00	$0.00		$2,498.02
815828	CONDENSER FORMED HF360	EA	SYST	P	10320	$114.86	$61.57	$153.47	3			1825.28	342.84	$0.00	$0.00		$2,498.02
815829	CONDENSER FORMED HF 510	EA	SYST	P	3806	$76.57	$36.22	$102.31	2			1825.28	342.84	$0.00	$0.00		$2,383.22
815830	CONDENSER FORMED HF701	EA	SYST	P	3553	$76.57	$36.22	$102.31	2			1825.28	342.84	$0.00	$0.00		$2,383.22
815837	BASKET HF WIDE PLAIN	EA	WIRE	P	14270	$497.72	$223.08	$460.41	9			811.23	152.37	$98.23	$146.23	1	$2,389.27
815838	BASKET HF NARROW PLAIN	EA	WIRE	P	56379	$995.44	$486.73	$665.04	13			811.23	152.37	$0.00	$0.00		$3,110.81
815854	CLIP COMPRESSOR MNTG ROTARY	EA	MIMP	P	41980			$562.72	11			596.01	111.95	$98.23	$146.23	1	$1,515.14
816049	CIRCLIP-BTM HINGE PIN	EA	MISC	P	11545			$102.31	2			270.41	50.79	$98.23	$146.23	1	$667.97
816082	CLIP CONDENSER TUBE	EA	MISC	P	12492	$38.29	$1,810.75	$102.31	2			270.41	50.79	$98.23	$146.23	1	$2,517.01
816083	CLIP RING	EA	PLAS	P	1136359	$114.86	$8,691.60	$1,943.95	38			811.23	152.37	$98.23	$146.23	1	$11,958.47
816141	CAP RED VINYL PLASTISOL 3/16IN	EA	MIMP	P	530009			$1,892.80	37			596.01	111.95	$98.23	$146.23	1	$2,845.22
816146	CAP PLASTIC WHITE 6.35	EA	MIMP	P	270979			$971.98	19			596.01	111.95	$98.23	$146.23	1	$1,924.40
816147	CAP GREEN VINYL PLASTISOL 5/16	EA	MIMP	P	281808			$0.00				596.01	111.95	$98.23	$146.23	1	$952.42
816678	LABEL INSTRUCTION JAPAN	EA	MIMP	P	5014	$38.29	$241.43	$51.16	1			596.01	111.95	$98.23	$146.23	1	$1,283.30
817150	INSULATOR PHIAL TUBE CONTROL W	EA	PLAS	P	59809	$38.29	$724.30	$51.16	1			811.23	152.37	$98.23	$146.23	1	$2,021.81
817236	PLATE REINFORCEMENT HF	EA	MISC	P	38603	$38.29	$628.93	$613.88	12			270.41	50.79	$98.23	$146.23	1	$1,846.76
817329	SEALANT FOAM HF HANDLE	EA	MISC	P	34883			$51.16	1			270.41	50.79	$98.23	$146.23	1	$616.82
817344	PLATE LOCK HF	EA	MISC	P	17354	$38.29	$287.31	$204.63	4	$0.00		270.41	50.79	$98.23	$146.23	1	$1,095.89
817430	HARNESS PCB HF	EA	MISC	P	23885	$76.57	$72.43	$1,125.45	22	$0.00		270.41	50.79	$98.23	$146.23	1	$1,840.11
817519	PIN HINGE PLATED	EA	MISC	P	51298	$114.86	$1,499.30	$306.94	6	$0.00		270.41	50.79	$98.23	$146.23	1	$2,486.76
818079	CLIP EARTH HFV810	EA	MISC	P	611	$76.57	$60.36	$0.00		$0.00		270.41	50.79	$98.23	$146.23	1	$702.59
818091	EVAP COIL TOP & SIDES H160	EA	SYST	P	7970	$229.72	$144.86	$306.94	6	$0.00		1825.28	342.84	$0.00	$0.00		$2,849.64
818092	EVAP COIL TOP & SIDES H220	EA	SYST	P	15446	$76.57	$48.29	$102.31	2	$0.00		1825.28	342.84	$0.00	$0.00		$2,395.29
818093	EVAP COIL TOP & SIDES H360	EA	SYST	P	10320	$76.57	$48.29	$102.31	2	$0.00		1825.28	342.84	$0.00	$0.00		$2,395.29
818094	EVAP COIL TOP & SIDES H510	EA	SYST	P	3806			$0.00		$0.00		1825.28	342.84	$0.00	$0.00		$2,168.12
818095	EVAP COIL TOP & SIDES H701	EA	SYST	P	3553	$76.57	$48.29	$102.31	2	$0.00		1825.28	342.84	$0.00	$0.00		$2,395.29
818196	PLUG PLASTIC OYSTER HF	EA	PLAS	P	164380	$38.29	$1,207.17	$562.72	11	$0.00		811.23	152.37	$98.23	$146.23	1	$3,016.24
818206	GROMMET DRAIN OUTLET HF OYST	EA	PWIP	P	88889	$114.86	$1,040.58	$409.25	8	$0.00		29204.43	5485.45	$98.23	$146.23	1	$36,499.03
818237	BAR TORSION PAINTED LH H160	EA	WIRE	P	7970	$421.15	$193.15	$1,278.92	25	$0.00		811.23	152.37	$98.23	$146.23	1	$3,101.28
818238	BAR TORSION PAINTED RH H160	EA	WIRE	P	7970	$306.29	$117.46	$1,330.07	26	$0.00		811.23	152.37	$98.23	$146.23	1	$2,961.88
818239	BAR TORSION PAINTED LH H220	EA	WIRE	P	15446	$268.00	$118.06	$511.57	10	$0.00		811.23	152.37	$98.23	$146.23	1	$2,105.69
818240	BAR TORSION PAINTED RH H220	EA	WIRE	P	15446	$229.72	$138.82	$562.72	11	$0.00		811.23	152.37	$98.23	$146.23	1	$2,139.32
818241	BAR TORSION PAINTED LH H360	EA	WIRE	P	10320	$114.86	$78.47	$511.57	10	$0.00		811.23	152.37	$98.23	$146.23	1	$1,912.96
818242	BAR TORSION PAINTED RH H360	EA	WIRE	P	10320	$153.15	$50.22	$562.72	11	$0.00		811.23	152.37	$98.23	$146.23	1	$1,974.15
818243	BAR TORSION PAINTED LH H510	EA	WIRE	P	3806	$191.43	$60.36	$358.10	7	$0.00		811.23	152.37	$98.23	$146.23	1	$1,817.95
818244	BAR TORSION PAINTED RH H510	EA	WIRE	P	3806	$229.72	$60.36	$306.94	6	$0.00		811.23	152.37	$98.23	$146.23	1	$1,805.08
818245	BAR TORSION PAINTED LH H701	EA	WIRE	P	3553	$153.15	$48.29	$409.25	8	$0.00		811.23	152.37	$98.23	$146.23	1	$1,818.75
818246	BAR TORSION PAINTED RH H701	EA	WIRE	P	3553	$191.43	$60.36	$358.10	7	$0.00		811.23	152.37	$98.23	$146.23	1	$1,817.95
818252	PIN LOCK HF	EA	MISC	P	18782	$153.15	$566.16	$255.78	5	$0.00		270.41	50.79	$98.23	$146.23	1	$1,540.75

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	PURCH 4 COST	STORE 1 COST	STORE 2 COST	STORE 2 TRX	STORE 4 COST	STORE 4 TRX	ADMIN 1 COST	PURCH 3 COST	STORE 3 COST	STORE 5 COST	STORE 3&5TRX	TOTAL COSTS
822220	TUBE COPPER ALUM TAIL ASS C260	EA	MIMP	P	10074	$38.29	$147.03	$0.00		$0.00		596.01	111.95	$98.23	$146.23	1	$1,137.74
825039	BAG MINIGRIP 62MMX75MM PRINTED	EA	MISC	P	162030			$562.72	11	$0.00		270.41	50.79	$98.23	$146.23	1	$1,128.38
850266	CLIP COMPRESSOR	EA	MISC	P	710116	$76.57	$6,277.27	$1,330.07	26	$0.00		270.41	50.79	$98.23	$146.23	1	$8,249.57
850274	PIN PIVOT	EA	MISC	P	162337	$76.57	$1,448.60	$511.57	10	$0.00		270.41	50.79	$98.23	$146.23	1	$2,602.40
850285	FILTER 7GM	EA	MIMP	P	197250	$38.29	$2,418.68	$665.04	13	$0.00		596.01	111.95	$98.23	$146.23	1	$4,074.43
850706	BRACKET HINGE DAIRY BAR	EA	PLAS	P	64670	$38.29	$1,207.17	$153.47	3	$0.00		811.23	152.37	$98.23	$146.23	1	$2,606.99
850806	LEVELLING FOOT M10 PLAIN	EA	MIMP	P	240000			$0.00		$0.00		596.01	111.95	$98.23	$146.23	1	$952.42
852031	CLIP BTTM THROAT HEATER	EA	MISC	P	198294	$114.86	$1,810.75	$2,302.05	45	$0.00		270.41	50.79	$98.23	$146.23	1	$4,793.32
852044	SHELF FC PLAIN 525	EA	WIRE	P	67960	$382.86	$977.81	$665.04	13	$0.00		811.23	152.37	$98.23	$146.23	1	$3,233.77
852208	TUBE DRAIN FREEZERS	EA	MISC	P	19827			$255.78	5	$0.00		270.41	50.79	$98.23	$146.23	1	$821.44
852402	TERMINAL INSULATOR BLOCK	EA	PLAS	P	18714			$102.31	2	$0.00		811.23	152.37	$98.23	$146.23	1	$1,310.37
852711	SHELF FC PLAIN	EA	WIRE	P	19827	$114.86	$159.35	$460.41	9	$0.00		811.23	152.37	$98.23	$146.23	1	$1,942.68
853022	SPRING RETURN EVAPORATOR	EA	MISC	P	327			$0.00		$0.00		270.41	50.79	$98.23	$146.23	1	$565.66
853293	INSULATION EVAP DOOR P190	EA	MISC	P	219			$0.00		$0.00		270.41	50.79	$98.23	$146.23	1	$565.66
853763	INSULATION CHILL TRAY P190	EA	MISC	P	259			$51.16	1	$0.00		270.41	50.79	$98.23	$146.23	1	$616.82
854900	SHELF GLASS 440MMX300MM	EA	MISC	P	38173	$153.15	$386.29	$306.94	6	$0.00		270.41	50.79	$98.23	$146.23	1	$1,412.04
856859	BAG POLY 620X530X1800/50MU	EA	MISC	P	48848	$114.86	$695.93	$1,381.23	27	$0.00		270.41	50.79	$98.23	$146.23	1	$2,757.68
870172	CLIP F.C. SHELF SUPPORT	EA	PLAS	P	1304218	$114.86	$10,864.50	$971.98	19	$0.00		811.23	152.37	$98.23	$146.23	1	$13,159.40
871015	PIN HINGE TOP RF	EA	MISC	P	144000	$229.72	$2,111.94	$0.00		$0.00		270.41	50.79	$98.23	$146.23	1	$2,907.32
871032	TERMINAL SPRING CONT. BOX 635	EA	MISC	P	98219			$767.35	15	$0.00		270.41	50.79	$98.23	$146.23	1	$1,333.01
871040	SPRING CONTROL BOX DOOR	EA	MISC	P	98888	$76.57	$603.58	$153.47	3	$0.00		270.41	50.79	$98.23	$146.23	1	$1,399.28
871041	CLIP ROLLER	EA	MISC	P	216762	$114.86	$1,810.75	$306.94	6	$0.00		270.41	50.79	$98.23	$146.23	1	$2,798.21
871077	LAMP PILOT 110V 15W SES(E14)	EA	MISC	P	7235			$102.31	2	$0.00		270.41	50.79	$98.23	$146.23	1	$667.97
871083	SPRING DOOR BUTTER COMP.	EA	MISC	P	66509	$114.86	$905.38	$562.72	11	$0.00		270.41	50.79	$98.23	$146.23	1	$2,148.62
871143	DUCT HARNESS PC 1000MM	EA	PLAS	P	14611	$76.57	$120.72	$306.94	6	$0.00		811.23	152.37	$98.23	$146.23	1	$1,712.29
871149	BASKET FC BTTM F/F WIDE K,F	EA	WIRE	P	16717	$574.29	$130.37	$869.66	17	$0.00		811.23	152.37	$98.23	$146.23	1	$2,782.38
871150	BASKET FC BTTM NARROW K,F	EA	WIRE	P	48170	$344.58	$331.97	$716.19	14	$0.00		811.23	152.37	$98.23	$146.23	1	$2,600.80
871154	DUCT HARNESS PC 1430MM	EA	PLAS	P	23251	$38.29	$241.43	$869.66	17	$0.00		811.23	152.37	$98.23	$146.23	1	$2,357.44
871181	PLUG FAN MNTG	EA	PLAS	P	39570	$38.29	$627.73	$409.25	8	$0.00		811.23	152.37	$98.23	$146.23	1	$2,283.33
871182	GROMMET FAN MOUNTING	EA	MISC	P	81572	$76.57	$724.30	$767.35	15	$0.00		270.41	50.79	$98.23	$146.23	1	$2,133.88
871196	HEATER & CABLE HC 230V	EA	MIMP	P	10983			$306.94	6	$0.00		596.01	111.95	$98.23	$146.23	1	$1,259.36
871225	DUCT HARNESS FC 485MM	EA	PLAS	P	15556			$306.94	6	$0.00		811.23	152.37	$98.23	$146.23	1	$1,515.00
871227	DUCT HARNESS FC 1240MM	EA	PLAS	P	7562	$38.29	$60.36	$255.78	5	$0.00		811.23	152.37	$98.23	$146.23	1	$1,562.49
871228	DUCT HARNESS FC 1320MM	EA	PLAS	P	30965			$1,023.13	20	$0.00		811.23	152.37	$98.23	$146.23	1	$2,231.19
871302	TERMINAL NEUTRAL CONTROL BOX	EA	TERM	P	98219	$153.15	$1,207.17	$1,023.13	20	$0.00		9734.81	1828.48	$98.23	$146.23	1	$14,191.20
871312	LAMP PILOT 250V 15W SES 4(E14)	EA	MISC	P	115649	$153.15	$663.94	$869.66	17	$0.00		270.41	50.79	$98.23	$146.23	1	$2,252.41
871377	BEARING IDS-26-SB5S	EA	MISC	P	46180			$613.88	12	$0.00		270.41	50.79	$98.23	$146.23	1	$1,179.54
871378	DUCT HARNESS PC 770MM	EA	PLAS	P	14161	$38.29	$181.08	$665.04	13	$0.00		811.23	152.37	$98.23	$146.23	1	$2,092.47
871379	DUCT HARNESS PC 910MM	EA	PLAS	P	13431			$306.94	6	$0.00		811.23	152.37	$98.23	$146.23	1	$1,515.00
871380	DUCT HARNESS PC 1175MM	EA	PLAS	P	13298	$38.29	$241.43	$460.41	9	$0.00		811.23	152.37	$98.23	$146.23	1	$1,948.19
871381	DUCT DRAIN PC 1295MM	EA	MISC	P	14513			$0.00		$0.00		270.41	50.79	$98.23	$146.23	1	$565.66
871387	SHELF FC TOP NO FROST BASE PLA	EA	WIRE	P	17862	$191.43	$193.15	$204.63	4	$0.00		811.23	152.37	$98.23	$146.23	1	$1,797.27
871390	PIN ROLLER PLAIN	EA	STUC	P	190000	$38.29	$1,207.17	$0.00		$0.00		1460.22	274.27	$0.00	$0.00		$2,979.95
871412	CONTROL & FUSE ASSY BARE	EA	MIMP	P	31161	$76.57	$965.73	$0.00		$0.00		596.01	111.95	$98.23	$146.23	1	$1,994.72
871516	BAG POLY 740X660X2000/50MU	EA	MISC	P	104236	$38.29	$1,050.24	$3,683.28	72	$0.00		270.41	50.79	$98.23	$146.23	1	$5,337.47
871592	BASKET FC BTTM F/F WIDE SHACK	EA	WIRE	P	1271	$38.29	$8.69	$51.16	1	$0.00		811.23	152.37	$98.23	$146.23	1	$1,306.20
871597	BASKET FC BTTM NARROW SHACK	EA	WIRE	P	4980	$114.86	$25.35	$153.47	3	$0.00		811.23	152.37	$98.23	$146.23	1	$1,501.74
871648	SHELF SLIDING WHITE BTTM FC &	EA	WIRE	P	52015	$497.72	$410.44	$1,023.13	20	$0.00		811.23	152.37	$98.23	$146.23	1	$3,139.35
871650	SHELF TOP FC F/F PLAIN	EA	WIRE	P	17862	$38.29	$48.29	$306.94	6	$0.00		811.23	152.37	$98.23	$146.23	1	$1,601.58
871651	SHELF TOP FC PLAIN	EA	WIRE	P	20071			$306.94	6	$0.00		811.23	152.37	$98.23	$146.23	1	$1,515.00
871655	PARTITION PLAIN HC	EA	WIRE	P	11545	$76.57	$68.93	$562.72	11	$0.00		811.23	152.37	$98.23	$146.23	1	$1,916.28
871880	PIN CENTRE HINGE	EA	MISC	P	110583	$114.86	$603.58	$767.35	15	$0.00		270.41	50.79	$98.23	$146.23	1	$2,051.45
871910	COVER EVAP ASSY N/FROST UNPAIN	EA	PNTP	P	33006	$76.57	$378.69	$102.31	2	$0.00		14602.22	2742.73	$98.23	$146.23	1	$18,146.98

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	PURCH 4 COST	STORE 1 COST	STORE 2 COST	STORE 2 TRX	STORE 4 COST	STORE 4 TRX	ADMIN 1 COST	PURCH 3 COST	STORE 3 COST	STORE 5 COST	STORE 3&5TRX	TOTAL COSTS
871912	NUT WELD CW-Y06H J.R.HANCOCK	EA	MISC	P	37000	$38.29	$603.58	$51.16	1	$0.00		270.41	50.79	$98.23	$146.23	1	$1,258.69
871916	INSULATION CROSS RAIL HC	EA	MISC	P	11545			$204.63	4	$0.00		270.41	50.79	$98.23	$146.23	1	$770.29
871996	CLIP CABLE 'P' NK-4N	EA	MISC	P	11545			$153.47	3	$0.00		270.41	50.79	$98.23	$146.23	1	$719.13
872080	SHELF FC TOP PLAIN 525	EA	WIRE	P	18128	$306.29	$289.72	$204.63	4	$0.00		811.23	152.37	$98.23	$146.23	1	$2,008.70
872132	BASKET FRUIT FINISHED WHITE	EA	WIRE	P	1508	$229.72	$13.52	$306.94	6	$0.00		811.23	152.37	$98.23	$146.23	1	$1,758.24
872243	SHELF PLAIN	EA	WIRE	P	98887	$727.44	$1,339.36	$1,023.13	20	$0.00		811.23	152.37	$98.23	$146.23	1	$4,297.99
872246	SHELF TALL STORAGE PLAIN	EA	WIRE	P	24274	$268.00	$271.61	$204.63	4	$0.00		811.23	152.37	$98.23	$146.23	1	$1,952.30
872281	SHELF PC PLAIN	EA	WIRE	P	10562	$114.86	$72.43	$102.31	2	$0.00		811.23	152.37	$98.23	$146.23	1	$1,497.66
872467	GROMMET COMPRESSOR MNTG	EA	MISC	P	740398	$114.86	$7,605.15	$1,739.33	34	$0.00		270.41	50.79	$98.23	$146.23	1	$10,025.00
872470	TERMINAL PHASE CONTROL BOX	EA	MISC	P	98219	$153.15	$1,207.17	$1,790.48	35	$0.00		270.41	50.79	$98.23	$146.23	1	$3,716.46
872491	WIRE STIFFENER LINER DOOR PC	EA	MISC	P	29759			$971.98	19	$0.00		270.41	50.79	$98.23	$146.23	1	$1,537.64
872505	EVAP TUBE TOP & SIDES F310	EA	TUBE	P	8277	$38.29	$18.11	$102.31	2	$0.00		1007.05	189.15	$0.00	$0.00		$1,354.91
872511	EVAP TUBE TOP & SIDES F160	EA	TUBE	P	4216	$38.29	$24.14	$51.16	1	$0.00		1007.05	189.15	$0.00	$0.00		$1,309.79
872512	EVAP TUBE TOP & SIDES F230	EA	TUBE	P	5005	$114.86	$72.43	$153.47	3	$0.00		1007.05	189.15	$0.00	$0.00		$1,536.96
872513	EVAP TUBE BACK & BOTTOM F310	EA	TUBE	P	8277	$38.29	$36.22	$51.16	1	$0.00		1007.05	189.15	$0.00	$0.00		$1,321.87
872514	EVAP TUBE BACK & BOTTOM F230	EA	TUBE	P	5005	$38.29	$36.22	$51.16	1	$0.00		1007.05	189.15	$0.00	$0.00		$1,321.87
872515	EVAP TUBE BACK & BOTTOM F160	EA	TUBE	P	4216	$38.29	$36.22	$51.16	1	$0.00		1007.05	189.15	$0.00	$0.00		$1,321.87
872516	EVAP TUBE BACK & BTTM C410B	EA	TUBE	P	7695	$38.29	$36.22	$51.16	1	$0.00		1007.05	189.15	$0.00	$0.00		$1,321.87
872517	EVAP TUBE BACK & BOTTOM C380B	EA	MISC	P	14513	$153.15	$144.86	$204.63	4	$0.00		270.41	50.79	$0.00	$0.00		$823.84
872526	FAN MOTOR BARE 230V	EA	MIMP	P	29945	$76.57	$965.73	$0.00		$0.00		596.01	111.95	$98.23	$146.23	1	$1,994.72
872580	DUCT DRAIN 940MM	EA	PLAS	P	10606	$38.29	$120.72	$460.41	9	$0.00		811.23	152.37	$98.23	$146.23	1	$1,827.48
872597	EVAP TUBE BACK & BTTM C240B	EA	TUBE	P	10606	$76.57	$72.43	$153.47	3	$0.00		1007.05	189.15	$0.00	$0.00		$1,498.67
872629	BASKET FC BTTM WIDE K,F CYCLIC	EA	WIRE	P	49996	$727.44	$263.65	$3,580.97	70	$0.00		811.23	152.37	$98.23	$146.23	1	$5,780.12
872632	BASKET FC DOOR PLAIN	EA	WIRE	P	37933	$153.15	$289.72	$562.72	11	$0.00		811.23	152.37	$98.23	$146.23	1	$2,213.65
872634	SPACER CONDENSER	EA	MISC	P	324674	$38.29	$3,621.50	$255.78	5	$0.00		270.41	50.79	$98.23	$146.23	1	$4,481.23
872766	EVAP TUBE TOP & SIDES C410B	EA	TUBE	P	7695	$38.29	$36.22	$51.16	1	$0.00		1007.05	189.15	$0.00	$0.00		$1,321.87
872767	EVAP TUBE TOP & SIDES C380B	EA	TUBE	P	14513	$114.86	$108.65	$153.47	3	$0.00		1007.05	189.15	$0.00	$0.00		$1,573.18
872768	EVAP TUBE TOP & SIDES C240B.	EA	TUBE	P	10606	$114.86	$72.43	$204.63	4	$0.00		1007.05	189.15	$0.00	$0.00		$1,588.12
872858	BAR COMMOMING 110V AMP LOK 600	EA	MISC	P	1525			$0.00		$0.00		270.41	50.79	$98.23	$146.23	1	$565.66
872862	TERMINAL UTILUX 6.3MM Q.C. H94	EA	TERM	P	5451			$0.00		$0.00		9734.81	1828.48	$98.23	$146.23	1	$11,807.75
872864	PIN MATE-N-LOK AMP 1-480351-0	EA	MISC	P	1817	$76.57	$482.87	$102.31	2	$0.00		270.41	50.79	$98.23	$146.23	1	$1,227.41
872865	HEATER CROSSRAIL 110V 'H' MODE	EA	MISC	P	562			$0.00		$0.00		270.41	50.79	$98.23	$146.23	1	$565.66
872867	PLUG MATE-N-LOK AMP 1-480349-0	EA	MISC	P	1817			$255.78	5	$0.00		270.41	50.79	$98.23	$146.23	1	$821.44
872868	HEATER DEFROST F/F COIL 230V	EA	MISC	P	38045	$918.87	$476.83	$1,432.39	28	$0.00		270.41	50.79	$98.23	$146.23	1	$3,393.75
872869	HEATER DEFROST F/F COIL 110V	EA	MISC	P	1525			$51.16	1	$161.35	2	270.41	50.79	$98.23	$146.23	1	$778.17
872896	PLUG 6WAY 110V AMP 1-480262-0	EA	MISC	P	1525			$51.16	1	$0.00		270.41	50.79	$98.23	$146.23	1	$616.82
872901	CAP 6WAY 110V AMP 1-480263-0	EA	MISC	P	1525			$0.00		$0.00		270.41	50.79	$98.23	$146.23	1	$565.66
873002	SEALANT FOAM TAPE 50X4X15MM EV	EA	TAPE	P	1298696	$38.29	$13,761.70	$102.31	2	$0.00		1043.02	195.91	$98.23	$146.23	1	$15,385.69
873003	SEALANT FOAM TAPE 40X4X20MM EV	EA	TAPE	P	324674	$38.29	$2,776.48	$51.16	1	$0.00		1043.02	195.91	$98.23	$146.23	1	$4,349.32
873008	PIN 'H'	EA	MISC	P	11545	$38.29	$301.79	$204.63	4	$0.00		270.41	50.79	$98.23	$146.23	1	$1,110.37
873018	SWITCH BUTTER COMP. 11604-22E	EA	MIMP	P	66509	$153.15	$353.54	$1,278.92	25	$0.00		596.01	111.95	$98.23	$146.23	1	$2,738.03
873028	HEATER BUTTER COMP 230V	EA	MIMP	P	66509	$191.43	$434.78	$2,199.74	43	$0.00		596.01	111.95	$98.23	$146.23	1	$3,778.37
873163	CAP CAPILLARY GREEN	EA	MISC	P	173710			$204.63	4	$0.00		270.41	50.79	$98.23	$146.23	1	$770.29
873164	CAP CAPILLARY RED	EA	MISC	P	221987			$613.88	12	$0.00		270.41	50.79	$98.23	$146.23	1	$1,179.54
873178	SACHET EVAP PLATE 635	EA	MISC	P	18749			$460.41	9	$0.00		270.41	50.79	$98.23	$146.23	1	$1,026.07
873196	HEATER WATER EVAP 230V	EA	MIMP	P	9322	$114.86	$169.00	$358.10	7	$0.00		596.01	111.95	$98.23	$146.23	1	$1,594.38
873197	HEATER WATER EVAP 110V	EA	MIMP	P	1525			$51.16	1	$0.00		596.01	111.95	$98.23	$146.23	1	$1,003.58
873204	SHELF HALF FRONT PLAIN	EA	WIRE	P	98596	$38.29	$48.29	$869.66	17	$0.00		811.23	152.37	$98.23	$146.23	1	$2,164.30
873206	SHELF HALF REAR PLAIN	EA	WIRE	P	98596	$38.29	$96.57	$818.51	16	$0.00		811.23	152.37	$98.23	$146.23	1	$2,161.43
873253	CONTROL DEFROST TIMER 230V N/F	EA	MIMP	P	39645	$38.29	$241.43	$1,227.76	24	$0.00		596.01	111.95	$98.23	$146.23	1	$2,459.90
873254	CONTROL DEFROST TIMER 110V EXP	EA	MIMP	P	1525			$0.00		$0.00		596.01	111.95	$98.23	$146.23	1	$952.42
873282	CABLE SUPPLY 220/230V EUROPE	EA	MIMP	P	365			$0.00		$0.00		596.01	111.95	$98.23	$146.23	1	$952.42
873291	HEATER DEFROST 230V	EA	MIMP	P	80434	$268.00	$845.02	$2,097.42	41	$0.00		596.01	111.95	$98.23	$146.23	1	$4,162.86

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	PURCH 4 COST	STORE 1 COST	STORE 2 COST	STORE 2 TRX	STORE 4 COST	STORE 4 TRX	ADMIN 1 COST	PURCH 3 COST	STORE 3 COST	STORE 5 COST	STORE 3&5TRX	TOTAL COSTS
873292	HEATER DEFROST 110V	EA	MIMP	P	1778			$0.00		$0.00		596.01	111.95	$98.23	$146.23	1	$952.42
873414	SHELF PC 635 PLAIN	EA	WIRE	P	200873	$2,067.46	$1,493.87	$2,608.99	51	$0.00		811.23	152.37	$98.23	$146.23	1	$7,378.38
873444	CABLE SUPPLY 110V SAUDI V803	EA	MISC	P	3400			$102.31	2	$0.00		270.41	50.79	$98.23	$146.23	1	$667.97
873491	BEARING DOOR END CAP WH/WH	EA	PLAS	P	156468	$38.29	$533.45	$204.63	4	$0.00		811.23	152.37	$98.23	$146.23	1	$1,984.43
873522	BRACKET HINGE CENTRE CROSS RAI	EA	MMET	P	23044	$76.57	$173.83	$665.04	13	$0.00		7301.11	1371.36	$98.23	$146.23	1	$9,832.37
873564	TUBE TAIL ASSY 635	EA	SYST	P	244652	$76.57	$4,285.44	$0.00		$0.00		0		$98.23	$146.23	1	$4,606.47
873621	BRACKET HINGE CENTRE 'H' WHITE	EA	MMET	P	5290	$76.57	$115.89	$0.00		$0.00		7301.11	1371.36	$98.23	$146.23	1	$9,109.39
873794	BEARING DOOR END CAP OYSTER	EA	PLAS	P	379251	$76.57	$1,448.60	$1,534.70	30	$0.00		811.23	152.37	$98.23	$146.23	1	$4,267.93
873814	PLUG TAPPED HOLE SANDSTONE	EA	PLAS	P	32892			$51.16	1	$0.00		811.23	152.37	$98.23	$146.23	1	$1,259.22
873815	TRIM CORNER S'STONE	EA	PLAS	P	10964			$0.00		$0.00		811.23	152.37	$98.23	$146.23	1	$1,208.06
873851	BRACKET HINGE CROSS OYSTER	EA	MMET	P	167454	$306.29	$1,352.03	$3,887.91	76	$0.00		7301.11	1371.36	$98.23	$146.23	1	$14,463.16
873996	HEATER TROPICAL 110V	EA	MISC	P	1424			$0.00		$0.00		270.41	50.79	$98.23	$146.23	1	$565.66
873997	HEATER TROPICAL 230V	EA	MISC	P	4931			$306.94	6	$161.35	2	270.41	50.79	$98.23	$146.23	1	$1,033.95
874059	BRACKET HINGE CROSS 'H' OYST	EA	MMET	P	17800	$191.43	$386.29	$358.10	7	$80.67	1	7301.11	1371.36	$98.23	$146.23	1	$9,933.42
874251	COVER COIL NF308	EA	MIMP	P	1216			$0.00		$0.00		596.01	111.95	$0.00	$0.00		$707.96
874275	HEATER DEFROST 230V C370	EA	MIMP	P	13259	$76.57	$211.25	$306.94	6	$0.00		596.01	111.95	$98.23	$146.23	1	$1,547.18
874276	HEATER DEFROST 110V C370	EA	MIMP	P	39			$0.00		$0.00		596.01	111.95	$98.23	$146.23	1	$952.42
874278	COVER EVAP ASSY N/FROST UNPAIN	EA	PNTP	P	5623	$76.57	$122.29	$0.00		$0.00		14602.22	2742.73	$0.00	$0.00		$17,543.81
874281	EVAP COIL N369B	EA	MIMP	P	5623			$1,176.60	23	$0.00		596.01	111.95	$0.00	$0.00		$1,884.56
874284	TUBE EVAP BACK & BTTM 635 T	EA	TUBE	P	20071	$114.86	$217.29	$153.47	3	$0.00		1007.05	189.15	$0.00	$0.00		$1,681.82
874285	TUBE EVAP BACK & BTTM 525 T	EA	TUBE	P	18128	$76.57	$144.86	$102.31	2	$0.00		1007.05	189.15	$0.00	$0.00		$1,519.94
874288	FAN MOTOR UNTERMINATED 230V	EA	MIMP	P	1216			$0.00		$0.00		596.01	111.95	$98.23	$146.23	1	$952.42
874331	DUCT DRAIN 327MM N375T	EA	PLAS	P	7562	$38.29	$60.36	$153.47	3	$0.00		811.23	152.37	$98.23	$146.23	1	$1,460.18
874332	DUCT DRAIN 367MM N400H,N405T	EA	PLAS	P	10829			$255.78	5	$0.00		811.23	152.37	$98.23	$146.23	1	$1,463.84
874333	DUCT DRAIN 450MM C390T,N375T	EA	PLAS	P	13431			$511.57	10	$0.00		811.23	152.37	$98.23	$146.23	1	$1,719.63
874334	DUCT DRAIN 520MM C415H,C420T,	EA	PLAS	P	14611			$358.10	7	$0.00		811.23	152.37	$98.23	$146.23	1	$1,566.16
874335	DUCT DRAIN 965MM C380B,N369B	EA	PLAS	P	20136	$38.29	$241.43	$767.35	15	$0.00		811.23	152.37	$98.23	$146.23	1	$2,255.13
874336	DUCT DRAIN 1065MM C410B,N395B	EA	PLAS	P	23251	$76.57	$241.43	$920.82	18	$0.00		811.23	152.37	$98.23	$146.23	1	$2,446.88
874337	RETAINER CABLE HF V810	EA	MISC	P	12947			$358.10	7	$0.00		270.41	50.79	$98.23	$146.23	1	$923.76
874338	TERMINAL 3WAY	EA	MISC	P	673567	$114.86	$6,373.84	$409.25	8	$0.00		270.41	50.79	$98.23	$146.23	1	$7,463.61
874349	DUCT DRAIN PC 345MM C335T,C22	EA	MISC	P	14161			$665.04	13	$0.00		270.41	50.79	$98.23	$146.23	1	$1,230.70
874381	DUCT DRAIN PC 470MM C370,365H	EA	MISC	P	13298			$613.88	12	$0.00		270.41	50.79	$98.23	$146.23	1	$1,179.54
874456	TUBE EVAP TOP & SIDES 635 T	EA	TUBE	P	20071	$306.29	$193.15	$409.25	8	$0.00		1007.05	189.15	$0.00	$0.00		$2,104.89
874459	TUBE EVAP TOP & SIDES 525 T	EA	TUBE	P	18128	$153.15	$144.86	$204.63	4	$0.00		1007.05	189.15	$0.00	$0.00		$1,698.84
874488	HEATER DEFROST 230V N308F	EA	MISC	P	1216			$0.00		$0.00		270.41	50.79	$0.00	$0.00		$321.20
874497	CLIP THERMAL MASS GREY	EA	MISC	P	95497			$1,585.86	31	$0.00		270.41	50.79	$98.23	$146.23	1	$2,151.52
874506	DUCT HARNESS FC 385MM N369B	EA	MISC	P	5623	$38.29	$120.72	$255.78	5	$0.00		270.41	50.79	$98.23	$146.23	1	$980.45
874509	BASKET FC BTTM F/F WIDE K,FN36	EA	WIRE	P	7044	$229.72	$77.26	$511.57	10	$0.00		811.23	152.37	$98.23	$146.23	1	$2,026.61
874514	HEATER DEFROST 220/250V	EA	MIMP	P	39269	$153.15	$251.09	$460.41	9	$0.00		596.01	111.95	$98.23	$146.23	1	$1,817.07
874515	HEATER DEFROST 110/115V	EA	MIMP	P	185	$38.29	$6.04	$0.00		$0.00		596.01	111.95	$98.23	$146.23	1	$996.75
874648	CONTROL DEFROST TIMER 230V 8HR	EA	MIMP	P	1216			$0.00		$0.00		596.01	111.95	$0.00	$0.00		$707.96
874733	GROMMET HARNESS FAN MOTOR	EA	MISC	P	1216			$0.00		$0.00		270.41	50.79	$0.00	$0.00		$321.20
874740	BASKET FC BTTM F/F WIDE SN369B	EA	WIRE	P	68			$0.00		$0.00		811.23	152.37	$0.00	$0.00		$963.60
876230	BASKET FC BTTM WIDE SHACK CYCL	EA	WIRE	P	6524	$38.29	$5.07	$102.31	2	$0.00		811.23	152.37	$98.23	$146.23	1	$1,353.73
900081	BAG POLY 250MMX550MMX30MU	EA	MISC	P	5281			$51.16	1	$0.00		270.41	50.79	$98.23	$146.23	1	$616.82
900230	UNIVERSAL 3WAY CAP AMP 1-4807	EA	MISC	P	39570	$114.86	$205.22	$767.35	15	$0.00		270.41	50.79	$98.23	$146.23	1	$1,653.09
900231	UNIVERSAL 1WAY PLUG AMP 1-3508	EA	MISC	P	39570			$306.94	6	$0.00		270.41	50.79	$98.23	$146.23	1	$872.60
900232	UNIVERSAL 1WAY CAP AMP 1-3508	EA	MISC	P	39570			$255.78	5	$0.00		270.41	50.79	$98.23	$146.23	1	$821.44
900299	UNIVERSAL 3WAY PLUG AMP 1-4807	EA	MISC	P	39570	$229.72	$567.37	$409.25	8	$0.00		270.41	50.79	$98.23	$146.23	1	$1,772.00
900310	TAPE 12.7MM SCOTCH 969 16.5M	RL	TAPE	P	758			$102.31	2	$0.00		1043.02	195.91	$98.23	$146.23	1	$1,585.70
900396	SPACER FOAM BARRIER PEF ROD(30	MT	MISC	P	26603			$358.10	7	$0.00		270.41	50.79	$98.23	$146.23	1	$923.76
900403	TAPE FOAM 5420 3X9MM(25M)	RL	TAPE	P	32			$51.16	1	$0.00		1043.02	195.91	$98.23	$146.23	1	$1,534.55
900406	TAPE 100MM DANCO D/S 959(50M)	RL	TAPE	P	1978	$76.57	$9.66	$460.41	9	$0.00		1043.02	195.91	$98.23	$146.23	1	$2,030.03

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	PURCH 4 COST	STORE 1 COST	STORE 2 COST	STORE 2 TRX	STORE 4 COST	STORE 4 TRX	ADMIN 1 COST	PURCH 3 COST	STORE 3 COST	STORE 5 COST	STORE 3&5TRX	TOTAL COSTS
900407	HOT MELT FULAMELT HM8678(20KG	KG	MISC	P	20697	$382.86	$212.46	$3,376.34	66	$0.00		270.41	50.79	$98.23	$146.23	1	$4,537.32
900413	TAPE FOIL 1200 0 (8KGPERROLL)	KG	TAPE	P	310			$0.00		$0.00		1043.02	195.91	$98.23	$146.23	1	$1,483.39
900414	HOT MELT GLUE KONISHI MU342	KG	MISC	P	1062			$0.00		$0.00		270.41	50.79	$98.23	$146.23	1	$565.66
900417	SPACER FOAMED	EA	MISC	P	246570	$114.86	$2,897.20	$920.82	18	$0.00		270.41	50.79	$98.23	$146.23	1	$4,498.54
900419	BAG POLY MINIGRIP 130X180MM	EA	MISC	P	162337			$869.66	17	$0.00		270.41	50.79	$98.23	$146.23	1	$1,435.32
900420	PLUG FOAM 80X80X10MM	EA	MISC	P	33736	$76.57	$241.43	$306.94	6	$0.00		270.41	50.79	$98.23	$146.23	1	$1,190.60
900426	TAPE 48MM VINYL 1503(100MT)	RL	TAPE	P	593	$76.57	$4.35	$409.25	8	$0.00		1043.02	195.91	$98.23	$146.23	1	$1,973.56
900449	BAG POLY 100X300MM	EA	MISC	P	10176			$0.00		$0.00		270.41	50.79	$98.23	$146.23	1	$565.66
900452	TAPE 96MM ALUM SCOTCH 425(55M)	RL	TAPE	P	732			$409.25	8	$0.00		1043.02	195.91	$98.23	$146.23	1	$1,892.64
900455	TAPE VENTING 25MM(50M)	RL	TAPE	P	789			$153.47	3	$0.00		1043.02	195.91	$98.23	$146.23	1	$1,636.86
900460	TAPE 24MM VINYL 1503 CLEAR (10	RL	TAPE	P	2620	$229.72	$30.90	$2,046.27	40	$0.00		1043.02	195.91	$98.23	$146.23	1	$3,790.28
900461	SILAFLEX R(RTV) COMPOUND 20LT	LT	MISC	P	565			$51.16	1	$0.00		270.41	50.79	$98.23	$146.23	1	$616.82
900465	TAPE 12MM D/S FOAM 4085(18MT)	RL	TAPE	P	742	$153.15	$6.52	$1,534.70	30	$0.00		1043.02	195.91	$98.23	$146.23	1	$3,177.76
900466	TAPE 12MM VINYL 6204 (66MT)	RL	TAPE	P	2097			$511.57	10	$0.00		1043.02	195.91	$98.23	$146.23	1	$1,994.96
900468	TERMINAL INSULATION BLOCK 4.8M	EA	MISC	P	16238			$51.16	1	$0.00		270.41	50.79	$98.23	$146.23	1	$616.82
900473	TAPE 38MM ALUMINIUM (300MT)	RL	TAPE	P	1610	$114.86	$13.04	$1,023.13	20	$0.00		1043.02	195.91	$98.23	$146.23	1	$2,634.42
900501	ADHESIVE HM METRON 709 25.4 ST	KG	MISC	P	1328	$114.86	$18.11	$4,757.57	93	$0.00		270.41	50.79	$98.23	$146.23	1	$5,456.20
900511	ADHESIVE FULLER HM 8689	KG	MISC	P	97			$51.16	1	$0.00		270.41	50.79	$98.23	$146.23	1	$616.82
901001	PLUG-TAPPED HOLE-WHITE	EA	PLAS	P	919990	$76.57	$7,243.00	$665.04	13	$0.00		811.23	152.37	$98.23	$146.23	1	$9,192.67
904001	PLUG TAPPED HOLE F/AVACADO	EA	PLAS	P	5148	$38.29	$1,207.17	$51.16	1	$0.00		811.23	152.37	$98.23	$146.23	1	$2,504.68
905001	PLUG TAPPED HOLE ALMOND	EA	PLAS	P	14934			$51.16	1	$0.00		811.23	152.37	$98.23	$146.23	1	$1,259.22
M9827	HEATSHRINK LVR 127 BLACK 100M	MT	MISC	P	318			$0.00		$0.00		270.41	50.79	$98.23	$146.23	1	$565.66
M9860	SILVAFLO 40 (1.5mm)	KG	MRAW	P	631	$76.57	$12.07	$51.16	1	$0.00		5840.89	1097.09	$0.00	$0.00		$7,077.78
M9864	SOLDER 40/60 US SPEC QG571-E	KG	MIMP	P	2062	$114.86	$14.49	$409.25	8	$0.00		596.01	111.95	$98.23	$146.23	1	$1,491.02
M9865	ROD COPPER FLO 2(2.5MM DIA)	KG	MRAW	P	935	$38.29	$12.07	$0.00		$0.00		5840.89	1097.09	$0.00	$0.00		$6,988.34
SP0503	TERMINAL UTILUX H1909	EA	TERM	P	10332			$460.41	9	$0.00		9734.81	1828.48	$98.23	$146.23	1	$12,268.16
SP0513	CLIP COIL 93-106-0062	EA	MISC	P	79140	$38.29	$603.58	$1,483.54	29	$0.00		270.41	50.79	$98.23	$146.23	1	$2,691.07
SP0558	INSULATOR AMP 2-735075-6	EA	MIMP	P	251770	$76.57	$1,448.60	$1,790.48	35	$0.00		596.01	111.95	$98.23	$146.23	1	$4,268.07
SP0591	LAMPHOLDER SHROUD	EA	PLAS	P	44735	$382.86	$603.58	$255.78	5	$0.00		811.23	152.37	$98.23	$146.23	1	$2,450.28
SP0592	LAMPHOLDER H.P.M.	EA	PLAS	P	44735	$191.43	$543.23	$255.78	5	$0.00		811.23	152.37	$98.23	$146.23	1	$2,198.50
SP0599	LAMP PYG 15W BC 110V	EA	MISC	P	227			$0.00		$0.00		270.41	50.79	$98.23	$146.23	1	$565.66
SP0600	LAMP PYG 15W BC 230V	EA	MISC	P	44508	$229.72	$603.58	$306.94	6	$0.00		270.41	50.79	$98.23	$146.23	1	$1,705.90
SP0601	TAPE 12MM VINYL 14 BLACK 1519	RL	TAPE	P	51			$204.63	4	$0.00		1043.02	195.91	$98.23	$146.23	1	$1,688.02
SP0602	TAPE 12MM VINYL 14 WHITE 1520	RL	TAPE	P	1674	$76.57	$17.38	$460.41	9	$0.00		1043.02	195.91	$98.23	$146.23	1	$2,037.75
SP0604	TAPE 12MM VINYL 14 BLUE 1522 (	RL	TAPE	P	26			$102.31	2	$0.00		1043.02	195.91	$98.23	$146.23	1	$1,585.70
SP0605	TAPE 12MM VINYL 14 GREEN 1523	RL	TAPE	P	43	$76.57	$2.90	$818.51	16	$0.00		1043.02	195.91	$98.23	$146.23	1	$2,381.37
SP0606	TAPE 12MM VINYL 14 YELLOW 1524	RL	TAPE	P	11	$76.57	$4.35	$613.88	12	$0.00		1043.02	195.91	$98.23	$146.23	1	$2,178.19
SP0611	TAPE 18MM VINYL 1503 CLEAR (10	RL	TAPE	P	69			$409.25	8	$0.00		1043.02	195.91	$98.23	$146.23	1	$1,892.64
SP0614	TAPE 24MM FILAMENT 1305 (45M)	RL	TAPE	P	16			$0.00		$0.00		1043.02	195.91	$98.23	$146.23	1	$1,483.39
SP0618	TAPE 50MM ALUMINIUM 425 (55MT)	RL	TAPE	P	28523	$268.00	$365.05	$5,371.45	105	$0.00		1043.02	195.91	$98.23	$146.23	1	$7,487.89
SP0619	TAPE 25MM ALUMINIUM 425 (55MT)	RL	TAPE	P	1095			$0.00		$0.00		1043.02	195.91	$98.23	$146.23	1	$1,483.39
SP0623	TAPE 30MM PAPER 3M SCOTCH 227(	RL	TAPE	P	1681	$76.57	$10.86	$613.88	12	$0.00		1043.02	195.91	$98.23	$146.23	1	$2,184.70
SP0624	TAPE 48MM PAPER 3M SCOTCH 227(	RL	TAPE	P	1396	$268.00	$28.25	$1,227.76	24	$0.00		1043.02	195.91	$98.23	$146.23	1	$3,007.40
SP0625	TAPE 60MM PAPER 3M SCOTCH 227(	RL	TAPE	P	616	$153.15	$5.79	$1,330.07	26	$0.00		1043.02	195.91	$98.23	$146.23	1	$2,972.40
SP0631	STRAPPING POLY 19MM PREMIUM (2	RL	TAPE	P	957	$114.86	$6.52	$3,274.03	64	$0.00		1043.02	195.91	$98.23	$146.23	1	$4,878.80
SP0635	TAPE 60MM POLYPROP BRN 530(100	RL	TAPE	P	7068	$153.15	$91.26	$1,739.33	34	$0.00		1043.02	195.91	$98.23	$146.23	1	$3,467.13
SP1006	ADHESIVE-STAYMELT 2061(20KG=BA	KG	MISC	P	411	$38.29	$12.07	$204.63	4	$0.00		270.41	50.79	$98.23	$146.23	1	$820.65
SP1008	ADHESIVE STAYMELT P2444	KG	MISC	P	4042			$153.47	3	$0.00		270.41	50.79	$98.23	$146.23	1	$719.13
SP1009	ADHESIVE SUPERFLEX 334M(20KG P	KG	MISC	P	411			$0.00		$0.00		270.41	50.79	$98.23	$146.23	1	$565.66
SP1010	WAX TECHNI 20005(MICRO CRYSTAL	KG	MISC	P	6549	$76.57	$20.28	$716.19	14	$0.00		270.41	50.79	$98.23	$146.23	1	$1,378.70
SP1011	PUTTY PLASTIC NO 5 (20KG BAG)	KG	MISC	P	25057	$76.57	$120.72	$2,762.46	54	$0.00		270.41	50.79	$98.23	$146.23	1	$3,525.41
SP1014	SEALANT MASTIC SR14(200LT/DRUM	LT	MISC	P	15404	$38.29	$96.57	$153.47	3	$0.00		270.41	50.79	$98.23	$146.23	1	$853.99
SP1055	HOT MELT HM991	KG	MISC	P	13249	$76.57	$72.43	$1,688.17	33	$0.00		270.41	50.79	$98.23	$146.23	1	$2,402.83

PART NUMBER	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	PURCH 4 COST	STORE 1 COST	STORE 2 COST	STORE 2 TRX	STORE 4 COST	STORE 4 TRX	ADMIN 1 COST	PURCH 3 COST	STORE 3 COST	STORE 5 COST	STORE 3&5TRX	TOTAL COSTS
SP1206	TIE TWIST PAPER 150MM(2500/CTN	EA	MISC	P	327538	$191.43	$7,243.00	$818.51	16	$0.00		270.41	50.79	$98.23	$146.23	1	$8,818.60
SP1228	TUBING 4MM ID PVC WHITE	MT	PLAS	P	21656			$306.94	6	$0.00		811.23	152.37	$98.23	$146.23	1	$1,515.00
SP1238	CLIP COMPRESSION SPIRE SCB 187	EA	MISC	P	40786	$38.29	$603.58	$613.88	12	$0.00		270.41	50.79	$98.23	$146.23	1	$1,821.41
					20089679	$27,681.21	$163,168.90	$173,830.35	3398	$403.37	5	$334,298.05	$62,790.77	$27,013.25	$40,213.25	275	$829,399.15

PART NUMB.	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	PURCH 4 COSTS	STORE 1 COST	STORE 2 COST	---¶ TRX	ADMIN 1 COST	PURCH 3 COST	STORE 3 COST	STORE 5 COST	STORE 3&5TRX	PLASTICS COST	--¶ TRX	TOTAL COSTS	COST PER UNIT
M0111	PLASTIC HIPS NAT DOW 8028	KG	POWD	R	2370	$38.29	$36.22	$255.78	5	$621.37	$116.71	$98.23	$146.23	1	$0.00		$1,312.83	$0.5539
M0201	PLASTIC SAN LURAN CLEAR 368R	KG	POWD	R	274599	$38.29	$2,082.36	$1,381.23	27	$621.37	$116.71	$98.23	$146.23	1	$0.00		$4,484.42	$0.0163
M0315	PLASTIC SAN CLEAR CHARCOAL	KG	POWD	R	648			$51.16	1	$621.37	$116.71	$0.00	$0.00		$0.00		$789.24	$1.2180
M0404	PLASTIC EVA CIL1541 NAT	KG	POWD	R	543			$0.00		$621.37	$116.71	$98.23	$146.23	1	$0.00		$982.54	$1.8095
M0506	PLASTIC LDPE NAT DOWLEX 2500	KG	POWD	R	710	$38.29	$24.14	$460.41	9	$621.37	$116.71	$0.00	$0.00		$0.00		$1,260.92	$1.7759
M0603	PLASTIC N6 NAT AKULON M223D	KG	POWD	R	2998			$0.00		$621.37	$116.71	$98.23	$146.23	1	$0.00		$982.54	$0.3277
M0701	PLASTIC ALULON N6-6 WHITE S22	KG	POWD	R	340	$38.29	$3.62	$0.00		$621.37	$116.71	$98.23	$146.23	1	$0.00		$1,024.45	$3.0131
M0702	PLASTIC AKULON N6-6 NAT S223D	KG	POWD	R	4871			$102.31	2	$621.37	$116.71	$98.23	$146.23	1	$0.00		$1,084.85	$0.2227
M0710	PLASTIC ZYTEL 408 NAT N6-6	KG	POWD	R	4171			$716.19	14	$621.37	$116.71	$98.23	$146.23	1	$0.00		$1,698.73	$0.4073
M0801	PLASTIC POLYPROP. KMT61 NATUR	KG	POWD	R	12041			$1,637.01	32	$621.37	$116.71	$98.23	$146.23	1	$0.00		$2,619.55	$0.2176
M0804	PLASTIC POLY NAT 1042 HOSTALE	KG	POWD	R	10			$0.00		$621.37	$116.71	$0.00	$0.00		$0.00		$738.08	$73.8080
M1001	PLASTIC ABS SIERRA CROPS 100	KG	POWD	R	624			$0.00		$621.37	$116.71	$0.00	$0.00		$0.00		$738.08	$1.1828
M1057	PLASTIC ABS TOYLAC 100 HERON	KG	POWD	R	94			$0.00		$621.37	$116.71	$0.00	$0.00		$0.00		$738.08	$7.8519
M1085	PLASTIC ABS CROPPER OYST 100	KG	POWD	R	315884	$191.43	$2,897.20	$23,685.53	463	$621.37	$116.71	$98.23	$146.23	1	$19,413.27	1	$47,169.97	$0.1493
M1087	PLASTIC ABS CROPS 100 RED	KG	POWD	R	14			$0.00		$621.37	$116.71	$98.23	$146.23	1	$0.00		$982.54	$70.1814
M1088	PLASTIC ABS LT SIERRA CYCOLAC	KG	POWD	R	451			$0.00		$621.37	$116.71	$0.00	$0.00		$0.00		$738.08	$1.6365
M1401	PLASTIC DURACON M90-04 ACTL W	KG	POWD	R	1068	$38.29	$12.07	$0.00		$621.37	$116.71	$98.23	$146.23	1	$0.00		$1,032.90	$0.9671
M1404	PLASTIC DURACON M90-14 ACTL N	KG	POWD	R	6	$38.29	$9.05	$0.00		$621.37	$116.71	$98.23	$146.23	1	$0.00		$1,029.88	$171.6467
M1554	PLASTIC PVC SUMI 7N-149-1 OYS	KG	POWD	R	137097			$7,571.18	148	$621.37	$116.71	$98.23	$146.23	1	$19,413.27	1	$27,966.99	$0.2040
M1608	PLASTIC HDPE HOECHST NAT GA72	KG	POWD	R	22024	$38.29	$120.72	$2,813.62	55	$621.37	$116.71	$98.23	$146.23	1	$0.00		$3,955.17	$0.1796
M1908	PLASTIC ABS ASTLAC COLDMIST M	KG	POWD	R	52214	$38.29	$796.73	$4,604.10	90	$621.37	$116.71	$98.23	$146.23	1	$0.00		$6,421.66	$0.1230
M1910	PLASTIC ABS CROPPER COLDMIST	KG	POWD	R	613			$204.63	4	$621.37	$116.71	$98.23	$146.23	1	$19,413.27	1	$20,600.44	$33.6059
M1911	PLASTIC ABS CROPPER 100 COOL	KG	POWD	R	703			$51.16	1	$621.37	$116.71	$98.23	$146.23	1	$0.00		$1,033.70	$1.4704
M1912	PLASTIC ABS CROPPER ABS 100 P	KG	POWD	R	3011			$562.72	11	$621.37	$116.71	$98.23	$146.23	1	$0.00		$1,545.26	$0.5132
M1913	PLASTIC ABS F/RET OYSTER KMB	KG	POWD	R	42			$0.00		$621.37	$116.71	$0.00	$0.00		$0.00		$738.08	$17.5733
M1914	PLASTIC ABS CROPPER 600 OYSTE	KG	POWD	R	3625	$38.29	$181.08	$102.31	2	$621.37	$116.71	$98.23	$146.23	1	$0.00		$1,304.22	$0.3598
M2516	PLASTIC PPMB WHITE GULF GDP41	KG	POWD	R	756			$0.00		$621.37	$116.71	$98.23	$146.23	1	$0.00		$982.54	$1.2997
M2526	PLASTIC ABS CROPPER P.P.M.B.	KG	POWD	R	436			$51.16	1	$621.37	$116.71	$0.00	$0.00		$0.00		$789.24	$1.8102
M2527	PLASTIC ABS CROPPERS COLDMIST	KG	POWD	R	6			$0.00		$621.37	$116.71	$98.23	$146.23	1	$0.00		$982.54	$163.7567
M2607	PLASTIC ABS MON CHEM RL939 WH	KG	POWD	R	981715	$153.15	$8,419.99	$4,911.04	96	$621.37	$116.71	$98.23	$146.23	1	$19,413.27	1	$33,879.99	$0.0345
M2609	PLASTIC MON CHEM RL939 OYST	KG	POWD	R	31138			$4,041.38	79	$621.37	$116.71	$98.23	$146.23	1	$19,413.27	1	$24,437.19	$0.7848
M3101	PLASTIC SANTOPREME NATURAL	KG	POWD	R	52			$0.00		$621.37	$116.71	$98.23	$146.23	1	$0.00		$982.54	$18.8950
M3105	PLASTIC SUNPRENE PVC WHITE	KG	POWD	R	135			$0.00		$621.37	$116.71	$98.23	$146.23	1	$0.00		$982.54	$7.2781
M3112	PLASTIC PVC SUMITOMO VM-1360V	KG	POWD	R	7023			$716.19	14	$621.37	$116.71	$98.23	$146.23	1	$0.00		$1,698.73	$0.2419
M3201	PLASTIC BASF ELASTOLLAN 598	KG	POWD	R	84			$0.00		$621.37	$116.71	$0.00	$0.00		$0.00		$738.08	$8.7867
M3603	PLASTIC PPO NORYL N190-80020	KG	POWD	R	51546	$38.29	$362.15	$7,315.40	143	$621.37	$116.71	$98.23	$146.23	1	$0.00		$8,698.38	$0.1687
M4316	PLASTIC NMB CROPPERS SIERRA	KG	POWD	R	2			$0.00		$621.37	$116.71	$0.00	$0.00		$0.00		$738.08	$369.0400
M4317	PLASTIC NMB CROPPERS SPICE	KG	POWD	R	0			$0.00		$621.37	$116.71	$0.00	$0.00		$0.00		$738.08	$0.0000
M4318	PLASTIC ABS CROPPER N.M.B. OY	KG	POWD	R	87			$0.00		$621.37	$116.71	$0.00	$0.00		$0.00		$738.08	$8.4837
M4403	PLASTIC PENTEX DC BLUE A6708	KG	POWD	R	2			$0.00		$621.37	$116.71	$0.00	$0.00		$0.00		$738.08	$369.0400
M4411	PLASTIC DC PP LT.SIERRA GE505	UM	POWD	R	36			$0.00		$621.37	$116.71	$0.00	$0.00		$0.00		$738.08	$20.5022
M4462	HSF P838 1521 DOUBLE BROWN	M2	POWD	R	4			$0.00		$621.37	$116.71	$0.00	$0.00		$0.00		$738.08	$184.5200
M4465	HSF KURZ P807 BRIGHT RED	M2	POWD	R	216			$51.16	1	$621.37	$116.71	$98.23	$146.23	1	$19,413.27	1	$20,446.97	$94.6619
M4466	HSF KURZ P811 WHITE	M2	POWD	R	1364	$76.57	$17.87	$102.31	2	$621.37	$116.71	$0.00	$0.00		$19,413.27	1	$20,348.10	$14.9180
M4467	HSF KURZ P812 BLACK	M2	POWD	R	1737			$102.31	2	$621.37	$116.71	$98.23	$146.23	1	$19,413.27	1	$20,498.12	$11.8009
M4477	HSF KURZ P831 BLUE	M2	POWD	R	333			$0.00		$621.37	$116.71	$98.23	$146.23	1	$19,413.27	1	$20,395.81	$61.2487
M4498	HSF KURZ GREY P808	M2	POWD	R	172			$0.00		$621.37	$116.71	$98.23	$146.23	1	$19,413.27	1	$20,395.81	$118.5803
M5512	SHEET ALUM 2400X900X0.6 1200H	EA	ALUM	R	99	$76.57	$2.41	$0.00		$14,602.22	$2,742.73	$0.00	$0.00		$0.00		$17,423.93	$175.9993
M5911	TUBING COPPER 4.76MMX.50(1M=.	MT	TUBE	R	891374			$460.41	9	$1,007.05	$189.15	$98.23	$146.23	1	$0.00		$1,901.07	$0.0021
M5915	TUBING COPPER 6.35MMX.71(1M=.	MT	TUBE	R	84781			$102.31	2	$1,007.05	$189.15	$98.23	$146.23	1	$0.00		$1,542.97	$0.0182
M5916	TUBING COPPER 6.35MMX.50(1M=.	MT	TUBE	R	477767			$511.57	10	$1,007.05	$189.15	$98.23	$146.23	1	$0.00		$1,952.23	$0.0041
M5920	TUBING COPPER 7.94MMX.71(1M=.	MT	TUBE	R	24512			$51.16	1	$1,007.05	$189.15	$98.23	$146.23	1	$0.00		$1,491.82	$0.0609
M6650	SHEET ZINC COATED 1219X2438X1	ST	STUC	R	672			$0.00		$1,460.22	$274.27	$0.00	$0.00		$0.00		$1,734.49	$2.5811

PART NUMB.	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	PURCH 4 COSTS	STORE 1 COST	STORE 2 COST	---¶ TRX	ADMIN 1 COST	PURCH 3 COST	STORE 3 COST	STORE 5 COST	STORE 3&5TRX	PLASTICS COST	--¶ TRX	TOTAL COSTS	COST PER UNIT
M6651	SHEET ZINC COATED 1219X2438X2	SH	STUC	R	622			$0.00		$1,460.22	$274.27	$0.00	$0.00		$0.00		$1,734.49	$2.7886
M7097	COIL UNCOATED SPCC 4D 120.4X1	KG	STUC	R	21583	$38.29	$222.12	$0.00		$1,460.22	$274.27	$98.23	$146.23	1	$0.00		$2,239.36	$0.1038
M7103	COIL UNCOATED SPCCSD 58.3+0.5	KG	STUC	R	5810			$0.00		$1,460.22	$274.27	$98.23	$146.23	1	$0.00		$1,978.95	$0.3406
M7104	COIL UNCOATED SPCCSD 156.6+1-	KG	STUC	R	6720	$38.29	$272.10	$0.00		$1,460.22	$274.27	$98.23	$146.23	1	$0.00		$2,289.34	$0.3407
M7117	COIL TINPLATE 38X0.3MM	KG	STUC	R	432			$0.00		$1,460.22	$274.27	$0.00	$0.00		$0.00		$1,734.49	$4.0150
M7123	COIL UNCOATED SPCC-SD 155MMX2	KG	STUC	R	12600			$0.00		$1,460.22	$274.27	$98.23	$146.23	1	$0.00		$1,978.95	$0.1571
M7132	COIL UNCOATED SPCC-SD 75MMX2	KG	STUC	R	18104	$38.29	$116.73	$0.00		$1,460.22	$274.27	$98.23	$146.23	1	$0.00		$2,133.97	$0.1179
M7136	COIL UNCOATED SPCC SD 46X2.6M	KG	STUC	R	1120			$0.00		$1,460.22	$274.27	$98.23	$146.23	1	$0.00		$1,978.95	$1.7669
M7305	COIL P/P 568X0.5 WHITE	KG	STPP	R	408029			$0.00		$730.11	$137.14	$98.23	$146.23	1	$0.00		$1,111.71	$0.0027
M7307	COIL P/P 568X0.5 FRESH AVOCAD	KG	STPP	R	5635			$0.00		$730.11	$137.14	$98.23	$146.23	1	$0.00		$1,111.71	$0.1973
M7311	COIL P/P 623+3-0X0.5 WHITE	KG	STPP	R	36160	$38.29	$936.76	$0.00		$730.11	$137.14	$98.23	$146.23	1	$0.00		$2,086.76	$0.0577
M7318	COIL P/P 747X0.5 WHITE	KG	STPP	R	258083	$38.29	$1,528.27	$0.00		$730.11	$137.14	$98.23	$146.23	1	$0.00		$2,678.27	$0.0104
M7321	COIL P/P 786X0.5 WHITE	KG	STPP	R	78602	$76.57	$2,683.53	$0.00		$730.11	$137.14	$98.23	$146.23	1	$0.00		$3,871.81	$0.0493
M7370	COIL P/P 577+3-0X0.5 OYSTER	KG	STPP	R	175166			$0.00		$730.11	$137.14	$98.23	$146.23	1	$0.00		$1,111.71	$0.0063
M7382	COIL P/P 848+3-0X0.6 WHITE	KG	STPP	R	527315			$0.00		$730.11	$137.14	$98.23	$146.23	1	$0.00		$1,111.71	$0.0021
M7391	COIL P/P 686+3-0X0.5 AL/WHITE	KG	STPP	R	24255			$0.00		$730.11	$137.14	$98.23	$146.23	1	$0.00		$1,111.71	$0.0458
M7393	COIL P/P 555+3-0X0.5 WHITE	KG	STPP	R	331511	$76.57	$3,021.54	$0.00		$730.11	$137.14	$98.23	$146.23	1	$0.00		$4,209.82	$0.0127
M7399	COIL P/P 686+3-0X0.5 WHITE	KG	STPP	R	1097847			$0.00		$730.11	$137.14	$98.23	$146.23	1	$0.00		$1,111.71	$0.0010
M7403	COIL P/P 686+3-0X0.5 S'STONE/	KG	STPP	R	56041			$0.00		$730.11	$137.14	$98.23	$146.23	1	$0.00		$1,111.71	$0.0198
M7439	COIL P/P 757+3-0X0.6 WHITE	KG	STPP	R	549023	$38.29	$11,773.50	$0.00		$730.11	$137.14	$98.23	$146.23	1	$0.00		$12,923.50	$0.0235
M7440	COIL P/P 757+3-0X0.6 AL/WHITE	KG	STPP	R	11131			$0.00		$730.11	$137.14	$98.23	$146.23	1	$0.00		$1,111.71	$0.0999
M7443	COIL P/P 647+3-0X0.5 WHITE	KG	STPP	R	195057			$0.00		$730.11	$137.14	$98.23	$146.23	1	$0.00		$1,111.71	$0.0057
M7445	COIL P/P 647+3-0X0.5 FA/WHITE	KG	STPP	R	2892			$0.00		$730.11	$137.14	$98.23	$146.23	1	$0.00		$1,111.71	$0.3844
M7447	COIL P/P 928+3-0X0.5 WHITE	KG	STPP	R	342827	$153.15	$12,239.47	$0.00		$730.11	$137.14	$98.23	$146.23	1	$0.00		$13,504.33	$0.0394
M7449	COIL PREPAINT 707+1-1X0.6 WHI	KG	STPP	R	103934			$0.00		$730.11	$137.14	$98.23	$146.23	1	$0.00		$1,111.71	$0.0107
M7450	COIL PREPAINT 775+1-1X0.6 WHI	KG	STPP	R	43186			$0.00		$730.11	$137.14	$98.23	$146.23	1	$0.00		$1,111.71	$0.0257
M7453	COIL P/P 757+3-0X0.6 S'STONE/	KG	STPP	R	22480			$0.00		$730.11	$137.14	$98.23	$146.23	1	$0.00		$1,111.71	$0.0495
M7454	COIL P/P 928+3-0X0.5 OYSTER	KG	STPP	R	36767			$0.00		$730.11	$137.14	$98.23	$146.23	1	$0.00		$1,111.71	$0.0302
M7603	COIL ZINC GLEN ZM 708+3-0X0.4	KG	STGZ	R	27357			$0.00		$1,825.28	$342.84	$98.23	$146.23	1	$0.00		$2,412.58	$0.0882
M7606	COIL ZINC GLEN ZM 533.5X0.4	KG	STGZ	R	101778			$0.00		$1,825.28	$342.84	$98.23	$146.23	1	$0.00		$2,412.58	$0.0237
M7607	COIL ZINC GLEN ZM 643+1.5-0 X	KG	STGZ	R	369815			$0.00		$1,825.28	$342.84	$98.23	$146.23	1	$0.00		$2,412.58	$0.0065
M7608	COIL ZINC ALLOY 615+3-0X0.4	KG	STGZ	R	69865			$51.16	1	$1,825.28	$342.84	$98.23	$146.23	1	$0.00		$2,463.74	$0.0353
M7611	COIL ZINC ALLOY 495+1.5-0X0.4	KG	STGZ	R	155526			$0.00		$1,825.28	$342.84	$98.23	$146.23	1	$0.00		$2,412.58	$0.0155
M7616	COIL ZINC GLEN ZM 1200X0.6	KG	STGZ	R	97027			$0.00		$1,825.28	$342.84	$0.00	$0.00		$0.00		$2,168.12	$0.0223
M7649	COIL ZINC GLEN 227X1.2MM	KG	STGZ	R	279864			$0.00		$1,825.28	$342.84	$98.23	$146.23	1	$0.00		$2,412.58	$0.0086
M7676	COIL ZINC ALLOY 158X1.2	KG	STGZ	R	3320			$0.00		$1,825.28	$342.84	$0.00	$0.00		$0.00		$2,168.12	$0.6530
M7680	COIL ZINC GLENN 380+3-3X1.2MM	KG	STGZ	R	9896			$0.00		$0.00		$0.00	$0.00		$0.00		$0.00	$0.0000
M8126	STEEL S/S 0.500X50.8MM T301/3	KG	STST	R	1000			$0.00		$14,602.22	$2,742.73	$98.23	$146.23	1	$0.00		$17,589.41	$17.5894
M8501	TUBE BUNDY 4.75MMX8.810MT(COI	CL	TUBE	R	22607	$76.57	$112.15	$0.00		$1,007.05	$189.15	$0.00	$0.00		$0.00		$1,384.92	$0.0613
M8502	TUBE BUNDY 4.75MMX8.600MT(COI	CL	TUBE	R	22607	$76.57	$164.30	$0.00		$1,007.05	$189.15	$98.23	$146.23	1	$0.00		$1,681.53	$0.0744
M8503	TUBE BUNDY 4.75MMX16.040MT(CO	CL	TUBE	R	46349	$191.43	$570.39	$0.00		$1,007.05	$189.15	$98.23	$146.23	1	$0.00		$2,202.48	$0.0475
M8515	TUBE BUNDY 4.75MMX12.420MT(CO	CL	TUBE	R	32410	$153.15	$247.71	$0.00		$1,007.05	$189.15	$98.23	$146.23	1	$0.00		$1,841.52	$0.0568
M8530	TUBE BUNDY 4.75MMX4.317M(COIL	CL	TUBE	R	5197			$0.00		$1,007.05	$189.15	$0.00	$0.00		$0.00		$1,196.20	$0.2302
M8532	TUBE BUNDY 4.75MMX12.77M(COIL	CL	TUBE	R	21500	$76.57	$145.71	$0.00		$1,007.05	$189.15	$98.23	$146.23	1	$0.00		$1,662.94	$0.0773
M8533	TUBE BUNDY 4.75MMX 9.61M(COIL	CL	TUBE	R	25397	$38.29	$144.02	$0.00		$1,007.05	$189.15	$98.23	$146.23	1	$0.00		$1,622.97	$0.0639
M8630	TUBE BUNDY 7.94MMX0.31MT(STRA	LG	TUBE	R	9221	$76.57	$120.72	$51.16	1	$1,007.05	$189.15	$0.00	$0.00		$0.00		$1,444.65	$0.1567
M8635	TUBE BUNDY 7.94MMX0.388MT(STR	LG	TUBE	R	9493	$76.57	$120.72	$0.00		$1,007.05	$189.15	$98.23	$146.23	1	$0.00		$1,637.95	$0.1725
M8651	TUBE BUNDY 4.75MMX7.500MT(COI	CL	TUBE	R	3441	$38.29	$29.33	$0.00		$1,007.05	$189.15	$0.00	$0.00		$0.00		$1,263.82	$0.3673
M9395	STRIP MAGNETIC RF's VF's	KG	MIMP	R	76918	$76.57	$1,527.91	$255.78	5	$596.01	$111.95	$98.23	$146.23	1	$0.00		$2,812.68	$0.0366
M9403	MDI-CR(250KG/DRUM)	KG	FOAM	R	849297	$114.86	$5,794.40	$665.04	13	$2,433.70	$457.12	$98.23	$146.23	1	$0.00		$9,709.58	$0.0114
M9409	PMDETA	KG	FOAM	R	1084	$38.29	$36.22	$153.47	3	$2,433.70	$457.12	$98.23	$146.23	1	$0.00		$3,363.26	$3.1026
M9415	FORANE 11(STABILISER) 280 KG/	KG	FOAM	R	113435	$38.29	$1,960.44	$409.25	8	$2,433.70	$457.12	$98.23	$146.23	1	$0.00		$5,543.26	$0.0489
M9417	POLYOL NF-100	KG	FOAM	R	504056	$114.86	$5,794.40	$665.04	13	$2,433.70	$457.12	$98.23	$146.23	1	$0.00		$9,709.58	$0.0193

APPENDIX No. 17 FINAL SOURCE CODE R

PART NUMB.	DESCRIPTION	UNIT OF MEAS	COMM CODE	SRCE CODE	FCAST USAGE	PURCH 4 COSTS	STORE 1 COST	STORE 2 COST	---¶ TRX	ADMIN 1 COST	PURCH 3 COST	STORE 3 COST	STORE 5 COST	STORE 3&5TRX	PLASTICS COST	--¶ TRX	TOTAL COSTS	COST PER UNIT
M9418	SILICONE L5340	KG	FOAM	R	7525	$38.29	$125.91	$102.31	2	$2,433.70	$457.12	$98.23	$146.23	1	$0.00		$3,401.79	$0.4521
M9419	TMHDA	KG	FOAM	R	3976	$38.29	$181.08	$255.78	5	$2,433.70	$457.12	$98.23	$146.23	1	$0.00		$3,610.43	$0.9081
M9535	COATING POLYETHYLENE WHITE 46	KG	POLY	R	87446	$38.29	$241.43	$153.47	3	$29,204.43	$5,485.45	$98.23	$146.23	1	$0.00		$35,367.53	$0.4044
M9831	REFRIGERANT 12(815KG/FULL CYL	KG	MRAW	R	27096	$38.29	$196.77	$102.31	2	$5,840.89	$1,097.09	$98.23	$146.23	1	$0.00		$7,519.81	$0.2775
M9870	WIRE CONDENSER STACK 1.25MM	KG	MRAW	R	282491	$76.57	$2,204.05	$0.00		$5,840.89	$1,097.09	$0.00	$0.00		$0.00		$9,218.60	$0.0326
SP1033	NITRIL LATEX(HYCAR)112KG/DRUM	KG	MRAW	R	2611			$0.00		$5,840.89	$1,097.09	$0.00	$0.00		$0.00		$6,937.98	$2.6572
					11039357	$2,833.26	$67,477.29	$65,480.51	1280	$176,779.26	$33,204.27	$8,153.09	$12,137.09	83	$194,132.70	10	$560,197.47	
Appendix No. 15	Source Code P - 1									$233,635.69	$43,883.96							
Appendix No. 16	Source Code P - 2									$334,298.05	$62,790.77							
										$744,713.00	$139,879.00	$8,153.09	$12,137.09	83	$194,132.70	10	$560,197.47	